

52411
GREATER TORONTO AREA

3Rs ANALYSIS

MUNICIPAL FINANCE

TECHNICAL APPENDIX

FINAL - MAY 1994



Ministry of Environment and Energy

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Prepared by Future Urban Research
for
Fiscal Planning and Information Management Branch
Ministry of Environment and Energy

FINAL - MAY 1994



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MUNICIPAL FINANCE TECHNICAL APPENDIX**

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1.0 INTRODUCTION

1.1 BACKGROUND

In 1989, the Government of Ontario announced its commitment to meeting a Provincial target of at least 50% reduction of waste going to landfills and incineration by the year 2000. This target (to be achieved through waste reduction, reuse and recycling -- the 3Rs) was confirmed by the present Government in 1990.

To facilitate the achievement of the 50% target, the Province introduced the Waste Management Act, 1992. The Act broadens the government's powers to reduce waste sent to disposal through a variety of means. It also vests powers in the Interim Waste Authority (IWA), an agency created to ease the waste disposal crisis in the Greater Toronto Area (GTA). The IWA is doing this by conducting environmental assessments to locate three long-term landfill sites in the GTA.

The GTA Regional Municipalities of Peel and Durham are each defined for the IWA as separate "primary service areas". Metropolitan Toronto and the Regional Municipality of York have been defined as a separate combined primary service area. Each of the three defined primary service areas is proposed to receive one new landfill facility through the IWA process. The fifth GTA Regional Municipality, Halton, has already obtained approval for a landfill site and thus is not part of the siting process.

1.2 PURPOSE OF STUDY

This study has two purposes, each of which relates directly to a requirement created by the *Waste Management Act*.

The first requirement pertains to waste estimates. The *Waste Management Act* (s.14) requires the Minister of the Environment and Energy to provide a written estimate as to:

- a) the amount of waste that would otherwise be expected to be generated in the

primary service area (i.e. each of Peel, Durham and Metro/York) during a twenty-year period that will not be generated because of waste reduction efforts; and

- b) the amount of waste that will be generated in the primary service area during a twenty-year period that will not need to be disposed of in the site because of the reuse or recycling of materials that are or could become waste.

These waste estimates were provided to the IWA by Minister's letter dated May 15, 1992. A copy of this letter may be found in Appendix A to the EA Input Document. The GTA 3Rs Analysis study provides additional analysis of 3Rs activities, in support of the reasonableness of the waste diversion estimates previously provided.

The second requirement pertains to analyzing the 3Rs as "alternatives to" landfill waste disposal sites. Section 15 of the *Waste Management Act* requires that the IWA environmental assessments contain a description of, and a statement of rationale and evaluation of the 3Rs as an alternative to the landfill waste disposal sites. By administrative agreement, the MOEE committed to provide such a rationale and evaluation to the IWA for use in its environmental assessments. The GTA 3Rs Analysis study fulfils this requirement.

A number of parameters guided the completion of the GTA 3Rs Analysis. The study parameters are as follows:

- * The study area for the GTA 3Rs Analysis is the area encompassing Metro Toronto and the Regional Municipalities of Durham, York, Peel and Halton. Metro Toronto/York Region, Durham Region, and Peel Region are defined in the *Waste Management Act* as the "primary service areas" for the purpose of establishing landfill sites. The Region of Halton has been included as part of the GTA 3Rs Analysis study area as it is part of the GTA. It is not, however, one of the "primary service areas". Thus, systems have not been developed and evaluated for Halton Region.
- * The MOEE is not the proponent or co-proponent of any 3Rs systems discussed in this study. The study provides additional analysis of 3Rs activities and supplemental data on waste diversion estimates for use by the IWA.
- * As stated in Section 15(2) of the *Waste Management Act*,

The environmental assessment is not required to contain any description or statement of the rationale for, or any description or evaluation of any matter relating to,

- a) *an alternative of waste reduction or reuse or recycling if that alternative would involve incineration of waste or the transportation of waste from the primary service area to any other area for disposal; or*

- b) *an alternative of some other single landfill waste disposal site if the capacity of the other site would appear to be inadequate in view of the estimate provided under Section 14.*

* The *Waste Management Act*, 1992 specifies that the IWA landfills are to operate for a minimum of 20 years.

1.3 STUDY APPROACH

The purpose of the GTA 3Rs Analysis is to identify and evaluate alternative 3Rs systems, comprised of combinations of 3Rs programs, technologies and practices, that could reasonably be implemented in the GTA. In this report, this range of reasonable approaches to 3Rs are termed 3Rs system alternatives. It is also to determine the potential for each 3Rs system to divert waste over the twenty-year minimum life expectancy of the GTA landfill sites and identifies the advantages and disadvantages of each system.

For the purpose of the present analysis, alternative 3Rs systems have been identified for residential wastes, as well as for industrial, commercial and institutional (IC&I) wastes. For each system, estimates of the amount of waste the system could potentially divert from disposal have been determined. An evaluation, done on a non-site-specific, generic level and documented in this report, identifies the net effects to the environment of each potential 3Rs system, in keeping with the *Environmental Assessment Act*.

In conducting the 3Rs work, and providing estimates of waste that will not require landfilling in the IWA established sites, MOEE is acting as a reliable authority in accordance with its legislative mandate, and not as the proponent or co-proponent of any of the 3Rs systems discussed. The alternatives presented in this report are not in any way structured as detailed implementation plans for the Province, the Regions or the private sector.

1.4 PURPOSE OF THE MUNICIPAL FINANCE ASSESSMENT

This technical appendix details and documents the municipal finance component of the GTA 3Rs analysis. Municipal finance effects are defined as the potential for changes to the financial resources of the municipalities; the costs and capital expenditures, and other financial mechanisms and arrangements.

The primary purpose of this municipal finance assessment is to identify and assess the effects on the regional and local municipalities, and more specifically on the constituent taxpayers. These

regional municipalities (Metro Toronto, Peel, York and Durham). The results of this assessment are to serve as input into the overall 3Rs systems evaluation.

The study objectives of the municipal finance assessment are as follows:

- * Identification of existing financial conditions within each of the regional municipalities.
- * Projection and quantification of municipal finance effects as a result of the implementation of any of the alternative 3Rs systems within each of the regional municipalities.
- * Analysis of the potential municipal finance effects including the development of mitigation measures for the purposes of identifying net effects.
- * Evaluation of the alternative systems from a municipal finance perspective.

1.5 OUTLINE OF REPORT

Chapter 2 presents the study approach used in the municipal finance assessment.

Chapter 3 provides a general description of the existing diversion activities, costs and financial mechanisms in the Regions of Halton, Durham, York, Peel and Metro Toronto including any Provincial and private funding present. It also details future waste diversion commitments in each of the Regions.

Chapter 4 provides a general description of the municipal finance conditions existing in the Regions of Halton, Durham, York, Peel and Metro Toronto. It also examines all of the future capital commitments that the Regions and local municipalities may experience.

Chapter 5 details the results of the assessment of the alternative 3Rs systems from a municipal finance perspective.

Chapter 6 summarizes the results of the comparative assessment of the alternative 3Rs systems from a municipal finance perspective.

2.0 APPROACH

2.1 METHOD AND TECHNIQUES OF ANALYSIS

The study team has identified several key study elements. These include:

- * A description of the existing situation for solid waste generation, diversion and disposal in the GTA;
- * Criteria needed for evaluating alternative diversion scenarios;
- * The effects of the current, or Status Quo alternative to future waste diversion;
- * Potential 3Rs alternative systems;
- * Evaluation of net environmental effects of alternatives;

The following steps were undertaken in the municipal finance study assessment:

- * establish the base case situation by examining the existing financial situation in each of the GTA Region's and local municipalities;
- * quantify the future plans and financial resources intended to be committed to waste diversion in each municipality;
- * quantify other future costs and capital expenditures that are priority items in these municipalities;
- * test the financial ability of the GTA municipalities to participate in the 3Rs alternative systems;
- * isolate the full extent of financial commitment that the municipalities may be able to make to further waste diversion;
- * estimate the effect of each of the alternative diversion systems on the municipal finance structure.

To establish the existing situation and to determine future trends for analytical purposes, information gathered for each municipality included:

- * Operating Budgets
- * Capital Budgets with Multi-Year Forecasts
- * Property Assessment Valuations
- * Property Assessment Growth Trends
- * Revenue Sources and Profiles
- * General Tax Levy Details

- * Household Property Tax Levels
- * Operating Expenditure Profiles
- * Waste Collection, Disposal and Diversion Expenditure Details
- * Debt and Debenture Levels
- * Debt Capacity and Allowable Borrowing Ratios
- * Reserve Fund Positions

This information was augmented through personal interviews with finance officials and other relevant staff in most of the municipalities. The discussions included future trends, priorities, expenditures, etc. for 3Rs and other municipal services. In addition to the above mentioned interviews, the Municipal Finance study team conducted a public consultation phase of the study whereby all of the municipalities were contacted by telephone. The Municipal Finance study team indicated that they would be available to meet with the municipalities to discuss any questions or concerns they had with respect to the study process and findings to date. For the most part, the consultation consisted of phone conversations with representatives at the lower tier and meetings at the Regional level. In the case of York and Metro requests for meetings by the study team were turned down. The primary purpose of the consultation phase was to obtain feedback from the GTA municipalities specifically on the draft Greater Toronto Area 3Rs Analysis - Municipal Finance Technical Appendix dated November 1993. Feedback or questions raised throughout the consultation phase were dealt with in this study where applicable. The contact sheets pertaining to the consultation phase are readily available from M.M. Dillon Ltd and a summary of comments may be found in the Environmental Assessment Input Document. (A complete list of persons contacted is contained in Schedule F of this report.)

As described above, the study process first established the existing financial profile for each of the GTA Regions and local area municipalities. The process of evaluating each of the alternative 3Rs systems consisted of adding the associated costs and revenues for each 3Rs option to the existing financial profiles. The level of magnitude resulting from the analysis of the alternative system suggests the degree of impact that the option may have on municipalities.

The GTA 3Rs Analysis developed a set of six possible residential waste diversion systems.

The six residential systems are:

- System 1 - Existing
- System 2 - Existing/Committed
- System 3 - Direct Cost
- System 4 - Expanded Blue Box
- System 5 - Wet/Dry
- System 6 - Mixed Waste Processing

Each of these systems are described in the component tables found in Schedule G of this report.

2.2 DATA USED IN THE ANALYSIS

The principal source of information for the base financial profiles was the Province's MARS (Municipal Archive Retrieval System) data base for 1992. This system includes data from the Financial Information Return which is mandatory information submitted by all municipalities in Ontario. To supplement the MARS information the Ontario Gazette was used to obtain the 1993 equalization factors to apply to the residential and commercial assessments. The equalization factor was used to bring all Regions to the same base year. The equalization factors are revised every three years. Prior to the 1993 revision, 1990 factors were the most recent. The 1993 equalization factors were used as they were the most recent and represent more realistically the current real estate market characteristics.

In addition, to the MARS information, the following list provides the information compiled for each Region and area municipality:

- * Current Budget Summaries for municipal operations for 1990, 1991, 1992 and 1993 where available
- * Capital Budget Summaries and Four Year Forecasts for 1990, 1991, 1992 and 1993 where available
- * Detailed Current Budgets for 3Rs activities for 1990, 1991, 1992 and 1993 where available
- * Detailed Capital Budgets and Four Year Forecasts for 3Rs activities 1990, 1991, 1992, 1993 and 1994 where available
- * The most recent Financial Information Return
- * The Development Charges Background Study Report if it contained a waste or 3Rs component
- * Other relevant waste management reports if applicable

In addition to this information, data were also obtained from the other consultant team members. Specifically, demographic and economic information was obtained from Hardy Stevenson and Associates and 3Rs logistics and volume information was obtained from Resource Integration Systems Limited. Further, the actual alternative system options and associated costs were obtained from Resource Integration Systems Limited.

The Municipal Finance and Cost Technical Appendices both estimate the cost of the existing residential systems for the GTA Regions. The primary difference between these estimates is that the figures shown in the Cost Technical Appendix (and repeated in the GTA 3Rs EA Input document) relate to total waste management costs for the evaluated systems. On the other hand, the figures shown in this Municipal Finance Technical Appendix (and repeated in the EA document) relate only to diversion costs. The municipal finance figures are therefore a subset of the total waste management amounts shown in the Cost Technical Appendix.

Moreover, while the Cost Technical Appendix relates all data on a tonnage basis, this Municipal Finance analysis puts all costs on a household basis. For the readers' assistance, conversions from tonnage estimates to household estimates can be accomplished by applying household waste

generation rates and/or diversion rates to the cost factors provided in these reports.

While the cost and municipal finance disciplines are consistent for the assessment of effects, the existing residential costs do not agree because of different methods and assumptions used in their development. Of primary importance to the cost discipline is the level of detail needed to develop unit rates for each component (blue box, HHW, leaf and yard waste, etc.). Moreover, this level of detail is not always available from municipal financial reports. As a result, the cost discipline obtained data from several sources -- interviews with waste managers and contractors, municipal data requests and published sources -- to obtain "reasonable" values for the unit costs of different operations. The total costs estimated by this component method is approximate.

On the other hand, this municipal finance analysis utilized the financial reports of the GTA municipalities which include items not considered by the cost discipline such as overhead (vehicle insurance, depot management, etc.) and local collection costs above normal allowances. To overcome these differences the cost and municipal finance disciplines have identified an adjustment factor to bring the two diversion cost methods into line. The use of Overhead costs at the system level in this municipal finance effects analysis is used to balance the cost estimates.

2.3 MAJOR ASSUMPTIONS USED IN THE ANALYSIS

The analysis implicitly deals with a long planning horizon. While the IWA landfill facilities may be in place by 1996 or 1997, the 3Rs alternatives examined in this report may not be implemented within the same time frame. In fact, for some system alternatives, a fully operational option may not be possible until after 2000. As a result, estimating the financial effects of these future programs over such a long time frame becomes subject to a large number of exogenous variables. These external factors are largely beyond the control of the analysis itself and could change in the future. If any or all of these factors change significantly, the results of the analysis could similarly change. As time progresses, the amount of change will become a question of magnitude. As such, the analysis conclusions are founded on the current situation described on the following pages.

The study team collectively developed a number of assumptions of which are incorporated in to the Municipal Finance analysis. They are as follows:

- * The study period extends from 1996 to 2015;
- * Markets will be available for the recycled materials and compost from source separated compostables;
- * Residential waste diversion systems are developed and analyzed separately for each GTA Region. However, because there is no effective waste management boundary for IC&I waste and recyclables (IC&I waste management is not confined by municipal boundaries), IC&I waste diversion systems are developed for the GTA as a whole;

- * Regulations identified in the IC&I systems are assumed to be enforced equally throughout the Province and for all systems;
- * 3Rs components would be developed in a manner that fulfils the necessary MOEE approvals (e.g. Certificate of Approval);
- * The 3Rs systems developed are considered reasonable, present a range of plausible diversion approaches and do not necessarily represent a range of plausible diversion approaches and do not necessarily represent the highest possible diversion at all times.
- * The mixing and matching of 3Rs components beyond what is done in this report is possible but not assessed in this study due to the large number of possible permutations and combinations;
- * The net effects analysis is based on the year 2000, the year in which all systems are assumed to be fully operational;
- * The analysis is generic; specific sites/locations for new facilities for each of the systems were neither known nor considered;
- * The potential effects of landfill were not considered in the systems net effects;
- * The effects of a facility are attributed to the region which uses it;
- * All systems were analyzed to the attributed to the region which uses it;
- * It is assumed that larger facilities will be sited to minimize effects (i.e. located in areas most compatible with the facility) through a systematic site selection process;
- * That mitigation measures identified are readily available and would be implemented effectively;
- * The diversion rate estimates were generated for the year 2000 (the year by which the systems were assumed to be fully operational) and for the 20 year cumulative study period. Increases in diversion rates after the year 2000 are attributed to source reduction;
- * A combined diversion rate estimate was determined for Metro Toronto and the Region of York. Alternative systems, however, were evaluated separately for these two Regions;
- * Only effects directly attributable to the 3Rs systems development and operation were considered;
- * For all of the residential 3Rs systems, it is assumed that the system would be designed

and managed such that there would not be any increase in the total number of collection vehicle trips in any residential area, or any increase in the net amount of time required to pick up materials;

- * The export of waste, for the purposes of this study, was considered disposal.

In addition to the assumptions developed by the study team, there are a number of specific assumptions that specifically pertain to the Municipal Finance analysis. These assumptions are described as follows. While based on the most recent information available, has several explicit assumptions which include:

1. Economic conditions over the study time frame of 1996 to 2015 (inflation, borrowing costs, etc.) are assumed to be relatively consistent with today's economy.
2. Provincial grants for all normal municipal operations (as distinct from any funding assistance for 3Rs programs) are assumed to remain at 1992 levels. The report itself comments on 3Rs funding assistance.
3. The growth and consistency of municipal expenditures and revenue profiles are assumed to reflect 1992 levels.
4. It will be demonstrated in the following chapter of this report that the financing arrangements between waste disposal and 3Rs in the GTA can become quite inter-dependant. This analysis was not able to determine beforehand whether, nor not, these financing arrangements will continue in the future. This suggests that, if and when the IWA sites become operable and royalty payments do not continue at present levels, overall costs to the rate payers may rise, in the absence of external funding, but not as a result of the alternative 3Rs systems being advanced. Therefore, only the net cost of the 3Rs alternatives were examined because all other costs may be the result of structural changes within, or upon, the municipality.
5. In the past, the functional handling of 3Rs between the Regions and local municipalities, and the financing arrangements between these two jurisdictions, was quite different from one Region to the next. Again, this analysis was not able to determine beforehand whether, nor not, these arrangements will continue in the future. As a result, overall costs to the ratepayers may rise due to structural or cost sharing changes, but again, this is not a result of alternative 3Rs systems being advanced in this report.
6. The analysis does not assume that external private agency funding would be available to assist with residential 3Rs system alternatives. If any occurs in the future it would reduce any cost effects in this report.

7. The capital and operating costs of the alternative systems were financed through conventional means. While the effect on reserve funds is identified as a criteria for the identification of unplanned or undesirable effects, the use of these funds to finance costs is also a discretionary municipal decision. As a result, the use of these funds was avoided where possible. This allowed most cost effects to fall directly onto taxes as a source of financing. While somewhat unrealistic, it provided for a consistent effects analysis for each Region. In reality, reserve fund use may be chosen by some GTA municipalities.

This non use of reserve funds, coupled with the difficulty in forecasting Provincial funding mitigation (see below), implies that the analysis is a worst case tax effect scenario. The receipt of external funds has, however, been included in the sensitivity analysis.

The analysis is also structured so that only residential diversion volumes are processed at municipal MRFs. (This arises as an implication of the study group assumption that there is no effective waste management boundary for IC&I waste and recyclables. Therefore IC&I waste diversion systems were developed for the GTA as a whole.) In spite of this, though, some industrial, commercial and institutional (IC&I) volumes are currently handled at the municipal processing centres. This ranges between 3 percent and 15 percent of the volume processed depending on the MRF. While there are costs associated with processing these volumes, the analysis does not include the tipping fee revenue that this IC&I material can potentially generate. As such, the analysis' conclusions regarding residential system costs represent a conservative and worst case scenario by possibly overstating the associated effects on property taxes, debt capacity, level of service, etc.

The net effects analysis separates external funding sources from revenue sources that are internal to the municipal structure. External funding sources represent private funding, provincial funding, material sales and tipping fees from IC&I generators. The only internal sources of funding considered were property taxes. While there are other mechanisms available to the Regions and municipalities to cover costs including reserve funds and residential tipping fees, these sources are ultimately financed by the taxpayer. For example, while tipping fees may appear to be an external source of funding to a Region, the local municipalities pass the tipping fees on through property taxes. It is for this reason that tipping fees as an internal funding source.

The tipping fees from IC&I sources that reside within the Region where the processing occurs is not necessarily external to the municipal structure because IC&I sources also pay taxes which provide the internal municipal funding. In this situation, however, the IC&I diverter is essentially paying twice for the material processing, once through property taxes and again through tipping fees. The GTA 3Rs Analysis is a generic study weighing alternative 3Rs systems and therefore is not intended to capture specific gains and losses to the upper and lower tier municipalities. Further, the study is not intended to be a detailed implementation plan or strategy for financing of alternative 3Rs systems. The purpose of the analysis is to capture the aggregate tax effect of the 3Rs systems on the taxpayers in each Region.

2.4 IMPACT ASSESSMENT CRITERIA

A formal procedure was used to evaluate the alternative systems. Criterion and indicators were utilized to assess the systems by identifying the financial elements that would most likely be affected by changes to the municipal financial structure. The following represents the criteria and indicators used in the Municipal Finance analysis.

- Criterion:** Potential Impact on Local Taxpayers
Indicators: Total Increase in Net General Municipal Levy
Net General Municipal Levy, adjusted for commercial/industrial property assessment, expressed on a per household basis
Rationale: To avoid unnecessary or burdensome costs to the local residents, the criterion focuses on determining cost effective system alternatives that minimize taxes and local charges. Further, it addresses the goal of minimizing impacts on communities.
- Criterion:** Potential Impact on Municipal Reserve Funds
Indicators: Total Amount of Reserve Funds
Reserves per Household
Reserves as a Percentage of Operating Expenditures
Rationale: Internal financing strategies to avoid debt or taxes decreases the effectiveness of reserve fund financing for other municipal priorities and reduces the municipality's ability to offset unexpected budget expenditures. Further, it addresses the goal of minimizing impacts on communities.
- Criterion:** Potential for Impact on the Level of Municipal Service
Indicators: Total Municipal Wages, Salaries, Materials & Contract Expenditures per Household
Current Expenditures by Department per Household
Rationale: Paying the same for less service is the same as a cost increase. To avoid an unnecessary debt burden to the local residents and allow for other local capital spending priorities, the criterion focuses on determining cost effective system alternatives that minimize debt burden. Further, it addresses the goal of minimizing impacts on human communities.
- Criterion:** Potential for Impact on the Provincial Treasury
Indicators: Amount of Provincial Funding
Rationale: To completely capture the potential effect of system alternatives on the people of Ontario and to avoid an unnecessary or burdensome cost to either the local municipalities, or the private sector, the criterion focuses on determining cost effective alternatives in terms of Provincial mitigation. Further, it addresses the goal of minimizing impacts on human communities.

During the course of this study, however, it was found that reliance on this criterion had to be lessened. Due to budget and social contract considerations,

the amount of grant funding beyond the current Provincial fiscal year is uncertain. In the extreme, the Province may find it necessary to address the funding assistance of each 3Rs alternative examined in this study on a case-by-case basis. Due to this, evaluations under this criterion became indeterminate. Actual resolution may possibly depend on actual funding negotiations with each Region.

Criterion: Potential for Impact on Private Sector Industries

Indicators: Amount of Private Sector Funding
Amount of Private Sector Costs
Amount of Costs Passed on Through Higher Prices
Amount of Private Sector Costs Financed Through Taxes, Incentives, Economies etc.

Rationale: To avoid unnecessary or burdensome costs being passed on to the private sector from the public sector, the criterion focuses on capturing the potential social effects on consumers while determining the system alternative cost on private sector industries within the GTA.

Criterion: Potential for Impact on the Debt Burden on the Municipality

Indicators: Amount of Debenture Debt
Annual Debt Payments as a Percentage of Expenditures
Available Debt Capacity (former OMB/MMA guideline)

Rationale: To avoid an unnecessary debt burden to local residents and allow for other local capital spending practices, the criterion focuses on determining cost effective system alternatives that minimize debt burdens. This in turn also minimizes future taxes and local changes to be paid by residents. Further, it addresses the goal of minimizing impacts on human communities.

Comparing 3Rs activities from one Region to the next shows very different ways of organizing and financing municipal operations. Therefore, prior to describing the base financial profiles of the GTA municipalities, the following chapter describes the financing, operations and structure of 3Rs activities/programs in each of the Regions.

3.0 WASTE MANAGEMENT FINANCING

In most all municipalities in Ontario, the budget approval process for the past few years was highlighted by fiscal restraint. In the GTA municipalities, considerable efforts were placed on keeping budgets at prior year levels, if not lower. For these reasons, the cost of 3Rs and specifically the Blue Box program received significant attention.

Due to the fiscal relevance of 3Rs this chapter first describes the financial mechanisms used by each of the GTA Regions to finance 3Rs operations. The description indicates that each Region finances their programs differently. Notwithstanding these differences, however, portions of the cost of 3Rs in each Region must ultimately be borne by local residents. These costs are also summarized in this chapter. The chapter then describes future financial trends in the GTA along with future 3Rs commitments.

While the following analysis focuses on the Regions directly affected by the IWA landfill sites, the Region of Halton is also included as it is a GTA region that undertakes significant 3Rs activities. By including Halton Region a complete picture of the various 3Rs activities in the GTA may be obtained and the differing costs and funding mechanisms may also be presented and compared.

3.1 ANALYSIS OF EXISTING SYSTEM

3.1.1 Financial Mechanisms

On an operational level, the upper tier Regions in the GTA have jurisdiction over 3Rs processing, while the local municipalities are largely responsible for Blue Box and the collection of recyclables relating to other programs. While this can differ from one Region to the next, in financial terms, the mechanism in each Region can become quite tangled. In most cases, the upper tier assumes significant financial responsibility for 3Rs activities. This structure, though, has been challenged recently. For example, North York and Metropolitan Toronto recently disagreed on specific jurisdictional roles. Moreover, due to the lack of funds, the financial mechanism in Metro may change in the near future. This is partly the result of tipping fee

changes. As such, the dynamics of the financial situation underscore the need for a description of the relationships involved for each of the GTA Regions. It should be noted that the descriptions of the systems include actual reported financing costs and the operating structure for 1992. (Except in the case of Durham and York Regions whose operating results were not available and therefore 1993 and 1992 budget figures respectively were utilized.)

Durham Region

Figure 1 indicates that financial responsibility in terms of funding 3Rs in Durham remains for the most part the responsibility of the Region. The area municipalities undertake Blue Box collection and Durham Region reimburses each municipality via its Waste Management Reserve. In 1993, payments to the area municipalities were budgeted at \$1.9 million for Blue Box collection. In terms of processing, the Region also uses a full cost recovery system. That is, a tipping fee of \$105.00 was charged in 1992 and a \$70.00 per tonne rate was budgeted for 1993 for recyclable materials delivered to the Durham Recycling Centre. The tipping fee, however, is not anticipated to cover the total costs of collecting and processing recyclable materials. Operating shortfalls would be financed through the Waste Management Reserve and in 1993 this contribution represented \$2,596,000. All other programs aside from Blue Box are a direct expense to the municipality that provides the program. During budget deliberations Durham Regional staff were considering establishing a fully self-sufficient recycling tipping fee that would finance all 3Rs costs. If fully costed, this tipping fee would approach \$250.00 per tonne.

Since Regional Council adopted the 1993 Durham budget, Metropolitan Toronto revised its waste disposal fee that is charged to Durham Region (and subject to rebate) from \$152.25 per tonne to \$90.00 per tonne. (This has been further reduced to \$50 per tonne in 1994.) As a result of this action, Durham Region budgeted its 3Rs processing fee at \$70.00 per tonne.

Metropolitan Toronto

The financial responsibility for the collection, transfer, and processing of most 3Rs material remains with Metro. The area municipalities undertake the physical collection of Blue Box material and the Cities of North York, Scarborough and Etobicoke operate their own composting and transfer facilities. Moreover, Metro compensates the local municipalities for their collection costs. Metro similarly offsets the three municipalities for the costs of the composting centres through a diversion credit system (at \$26.50 per tonne for leaves and \$35.00 per tonne for yard waste). That is, the municipalities are paid according to the volumes processed. (The City of Toronto does not take part in the direct Blue Box collection compensation program, but rather operates on a diversion credit system.) The funds to finance the 3Rs credits and Blue Box activities accumulated from the tipping fees charged at the Keele Valley and Brock Road landfill sites, and were drawn from Metro's Waste Management Reserve.

It should be noted that fiscal responsibility for all other 3Rs programs aside from Blue Box and composting, remains a direct expense to the area municipality that performs the service/program. The financial structure is presented on Figure 2.

York Region

In York Region, the area municipalities assume financial responsibility for collection and processing of Blue Box materials and all other 3Rs programs other than HHW and organic yard waste. These programs are funded through the local municipal levies. The costs for processing are based on a cost sharing approach. Each municipality is assessed the gross cost of processing less the revenues received from sale of materials. The costs are allocated to each municipality based on population, and a waste generation factor, not actual tonnage. It should be noted that, in 1992, the Region of York assumed some financial responsibility for the household hazardous waste and the organic yard waste programs. However, a tipping fee was charged to finance the programs, but it did not cover the operating costs of the programs and the Region financed the shortfall. The shortfall was funded by the Regional Waste Management Reserve Fund. This fund consists mainly of royalty revenue that accumulates from Metropolitan Toronto for the Keele Valley Landfill site. The financial structure is presented on Figure 3.

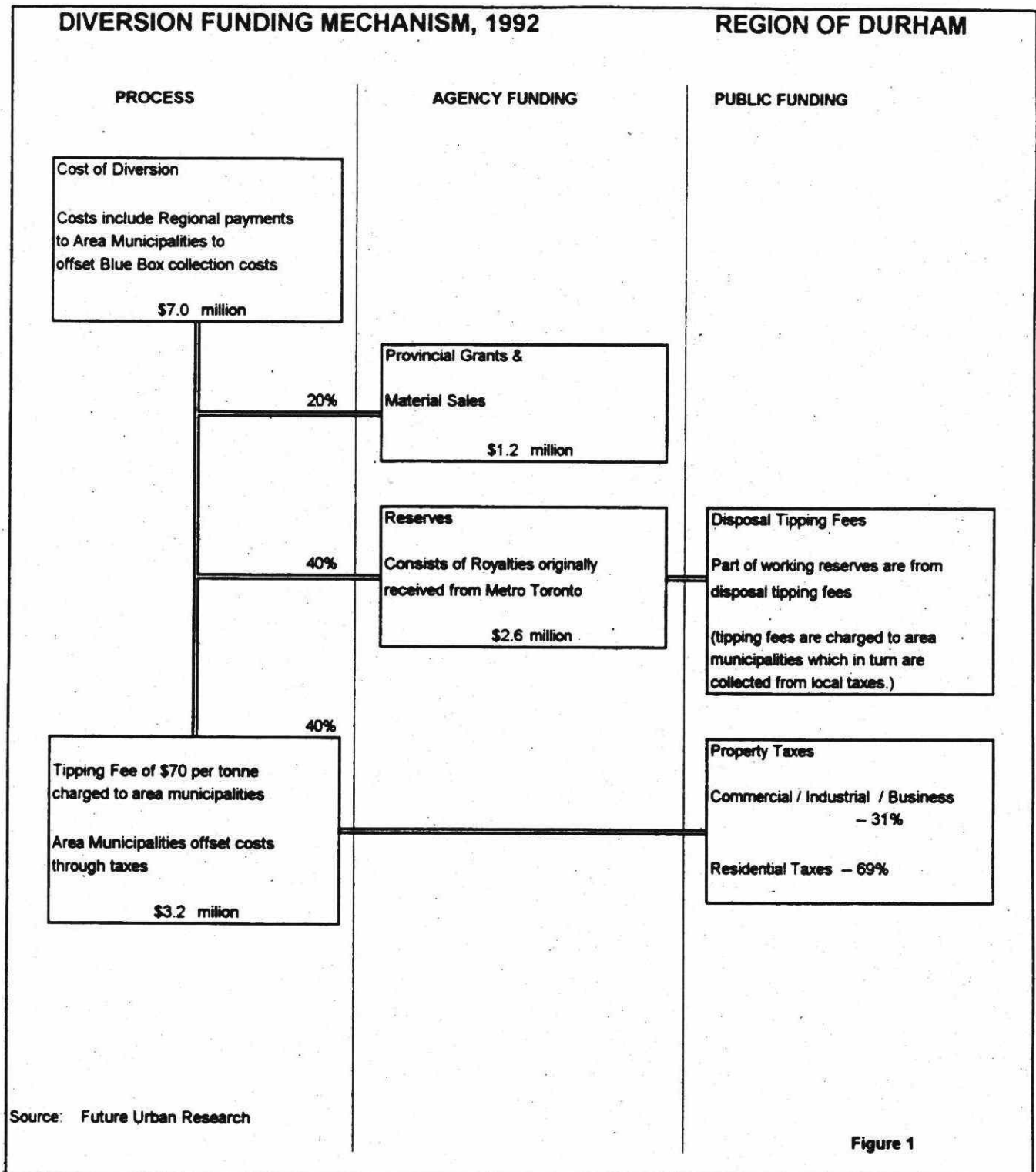
Peel Region

Since January, 1991 financial responsibility in terms of funding all programs has been a Regional responsibility. The Region assumes financial responsibility for collection and processing which is funded through the reserve which accumulates from the tipping fees charged for landfill waste (since 1978). The Region funds the net collection and processing costs of the area municipalities programs, that is, the cost after any revenues received from the sale of recyclable materials and grants. The financial structure is presented on Figure 4.

The operational administration of the 3Rs programs in Peel Region is handled by the three area municipalities. These municipalities arrange the physical collection and processing of recyclable materials. All three area municipalities are responsible for and actively participate in, the residential Blue Box program (although the type of material accepted varies). The Region administers and finances entirely the Reusable Goods Exchange Program, the Backyard Composter program and the Recycling Depots.

Halton Region

In Halton, the Region assumes financial and operational responsibility for Blue Box collection which is funded through the Regional levy. In terms of processing, the Region also assumes some financial responsibility. A tipping fee of \$100.00 per tonne is charged to each municipality for recyclable materials delivered to the Halton MRF. The tipping fee charged does not necessarily cover the total costs of administering, collecting and processing of the recyclable materials. The tipping fee charged to each municipality is subsequently financed through local property taxes. It should be noted that the fiscal responsibility most other 3Rs programs aside from Blue Box remains a direct expense to the area municipality that performs the service/program. The financial structure is presented on Figure 5.



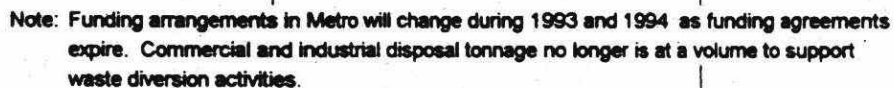
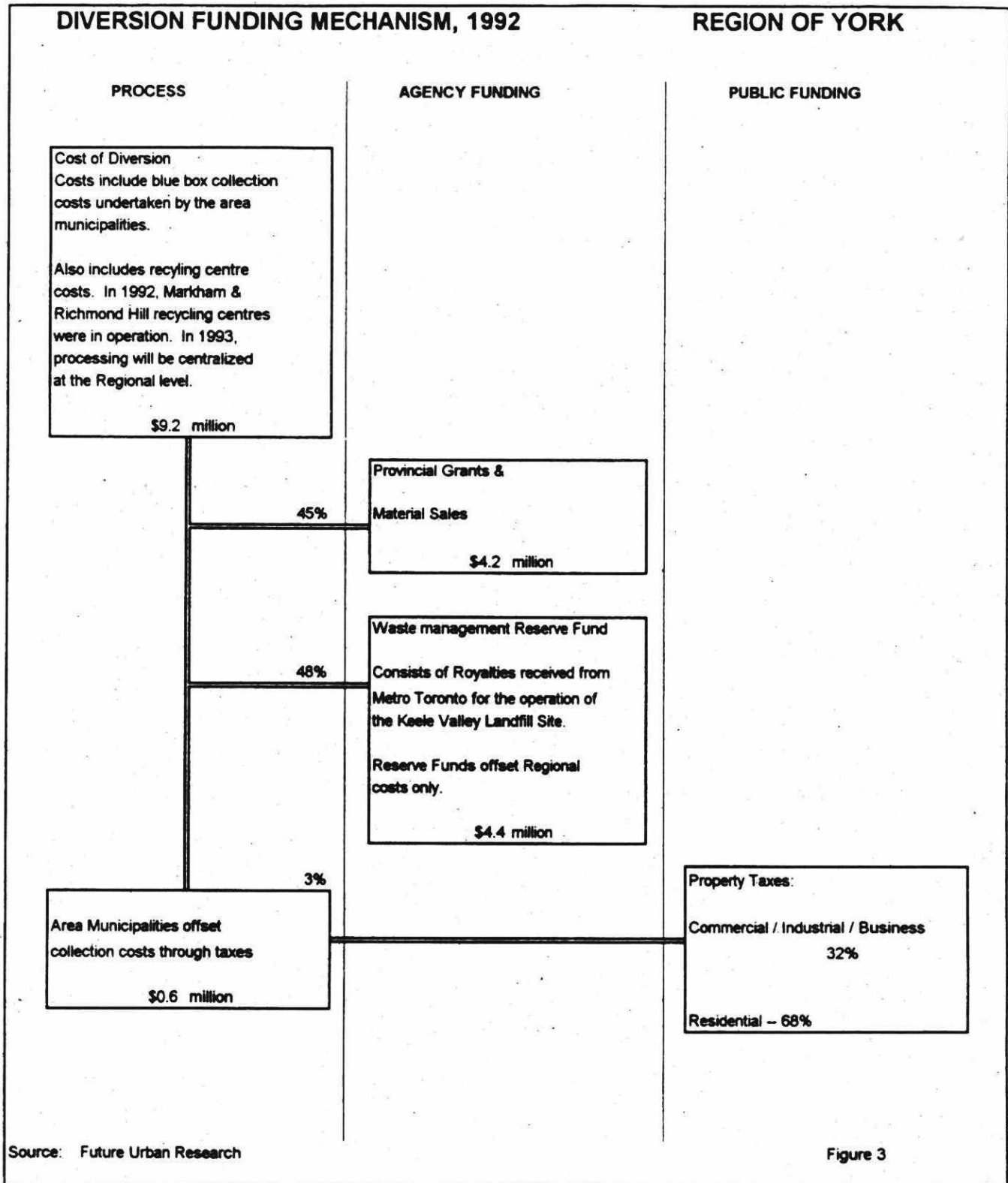
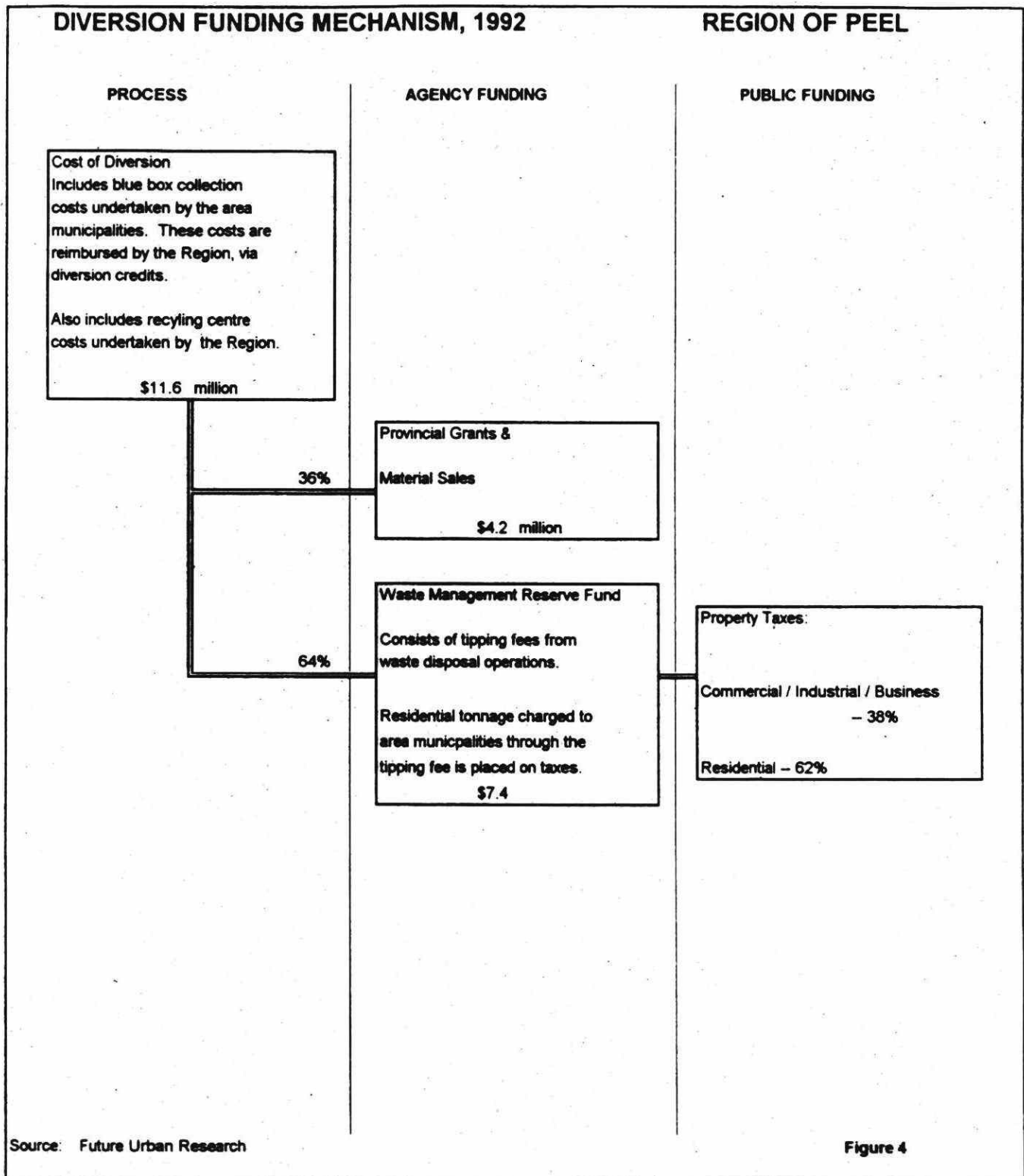


Figure 2





REGION OF HALTON



Figure 6

3.2 THE COST OF 3Rs ACTIVITIES IN THE GTA

Table 3-1 summarizes 3Rs costs in the GTA. It is compiled from 1992 operating financial statements and excerpts from waste management reports. The detailed municipal breakdown of 3Rs program costs is presented in Schedule B of this report.

This table demonstrates the gross and net costs of 3Rs activities on the individual households within the Regions. The table excludes the various internal financing sources that may be used to offset costs, such as, tipping fees or reserve fund financing. This is presented in this manner because regardless of internal (local) financing and after outside funding sources are taken into account, all charges ultimately are borne by the local taxpayer. This table takes into account: material sales and Provincial funding sources, and therefore excludes: internal financing, diversion credits, etc. The summary table also corresponds to the financing mechanism tables shown in Figures 1 through 5.

Table 3-1 also reflects the amount of commercial, industrial and business taxes paid at the local level so that a clear determination could be made of the remaining net household costs. Also, inter-municipal payments, mostly all from the Regions to the lower tier, to offset diversion costs are accounted for in the analysis, so that proper consolidations can be made.

The figures do not include the cost of disposing diversion material. Most Regions do not charge for this because it effectively represents an internal transfer from the diversion program to the disposal program. Our discussions with waste managers, however, suggest that this aspect is not material, ranging around 1 percent of total diversion volume.

For the entire GTA residential 3Rs efforts in 1992 approached \$89.6 million. While costs in Metro approached \$54.2 million, 3Rs costs approached \$35.4 million in the rest of the GTA Regions. This included: Peel Region - \$11.6 million, York Region - \$9.2 million, Durham Region - \$6.9 million and Halton Region - \$7.5 million.

After material sales and MOEE funding of \$18.9 million are considered, net operating costs approached \$70.6 million. While net costs in Metro totalled \$47.0 million net costs for the rest of the GTA Regions total \$23.6 million. This is comprised of: Peel Region - \$7.4 million, York Region - \$4.9 million, Durham Region - \$5.7 million and Halton Region \$5.4 million.

According to Resource Integration Systems Ltd. figures, total tonnage generated in 1992 in the GTA approached 1,872,607 tonnes, with approximately 398,624 tonnes diverted from landfill and the remaining 1,455,983 tonnes going to landfill. This equates to an overall diversion of approximately 21 percent for the entire GTA.

Table 3-1

**Total GTA 3Rs Costs
1992**

	Net Cost	Residential Share of Taxes	Residential Costs	Residential Cost Per Household
Durham Region	\$5,758,350	69%	\$3,944,470	\$28
Metro Toronto	47,046,995	45%	22,582,558	26
York Region	4,988,208	68%	3,391,981	21
Peel Region	7,460,817	62%	4,618,246	20
Halton Region	5,401,033	69%	3,710,510	33

Source: Municipal Budgets
 Ministry of Municipal Affairs
 MARS (Municipal Archive Retrieval System),

Table 3-1 also presents 3Rs costs on a household basis. To determine the household cost of 3Rs programs, a non-residential share of net costs was excluded from the calculations. This was done to reflect the fact that a portion of local taxes is paid by the commercial/industrial sector. Throughout the GTA, net costs in 1992 for 3Rs programs averaged \$25.00 per household. This amount ranged from \$26.00 per household in Metro to \$25.00 per household in the rest of the GTA. Regionally, household costs were: Peel - \$20.00 per household, York - \$21.00 per household, Durham - \$28.00 per household and Halton \$33.00 per household.

Table 3-2 shows the individual per household costs for 3Rs as compared to the household municipal tax levels (excluding schools). It is pointed out that not all of these costs are directly funded by the individual tax levies. In some Regions these costs are either funded by tipping fees

and/or reserve fund contributions. This table demonstrates, however, the relative magnitudes of net 3Rs costs as compared to municipal taxation. (Municipal taxation figures are detailed in Chapter 4 of this report entitled Municipal Finance Profiles.)

Table 3-2

**Per Household 3Rs Costs
Compared to Municipal Taxation
(Excluding School Levies)
1992**

	Taxation	Cost of 3Rs	Percent
Durham Region	\$1,553	\$28	1.8%
Metro Toronto	1,355	26	1.5%
York Region	1,223	21	1.7%
Peel Region	1,337	20	1.5%
Halton Region	1,290	33	2.6%

Source: Future Urban Research

From this cost analysis, the amount of increment to an augmented disposal tipping fee to fund diversion can also be determined. Table 3-3 shows the current disposal volumes for each of the GTA Regions -- a total of about 1.5 million tonnes of waste per year. Also, given the net cost for each Region's diversion programs shown above, an average increase of \$50 per tonne of waste disposed would fund the current diversion programs. In each of the Regions, though this varies from \$29 in Peel to \$56 in Durham.

Table 3-3

**Disposal Tip Fee Increment
for Diversion Programs**

	Durham	Metro	York	Peel	Halton	Total
Tonnes						
Res. Waste Diverted	36,987	201,177	54,100	59,967	46,393	398,624
Res. Waste Disposed	103,091	868,613	142,150	253,329	88,800	1,455,983
Total Res. Waste Generated	140,078	1,069,790	196,250	313,296	135,193	1,854,607
%	26.4%	18.8%	27.6%	19.1%	34.3%	21.5%
Diversion Cost (\$000)						
Net 1992 Costs	5,758	47,047	4,988	7,461	5,401	70,655
Diversion Cost per Tonne of Waste Disposed	56	54	35	29	61	49

Source: Future Urban Research -- Cost Figures
Resource Integration Systems -- Tonnage Amounts

3.3 3Rs ACTIVITIES IN THE GTA

Each of the five regional municipalities in the Greater Toronto Area is actively engaged in 3Rs activities to help achieve Provincial waste diversion targets. The following section describes 3Rs programs/facilities currently in place within the GTA. In addition, due to the fact that 3Rs diversion costs are directly affected by landfill tipping fees or avoided disposal costs, our analysis has included a brief review of the current landfill waste programs/facilities within the GTA.

Historically, waste disposal services were available at cost. However, waste management (disposal and 3Rs) is now entangled. The tipping fees charged for landfill disposal are not cost based but are set as deterrent prices or for revenue generation purposes designed to help fund

3Rs activities. For example, in Peel, municipal recycling is funded through the Regional Working Fund Reserve, which has accumulated from the excess of the landfill tipping fee charged, over the cost to dispose. This situation has reversed itself more recently with Metro's tipping fee reduction to \$50 per tonne. However, more all encompassing waste management strategies are now being considered as an extension to waste disposal bag charges. Besides this, since waste diversion is considered to be a beneficial environmental goal subsidization of this program may increase in the future.

3.3.1 The Regional Municipality of Durham

The Region of Durham has implemented the following programs/facilities to divert waste from landfill:

- * bi-weekly curbside collection of Blue Box materials;
- * collection of bins of recyclables from multi-family units;
- * Igloo program that services both rural and high traffic urban public areas;
- * household hazardous waste (HHW) programs including drop offs operated by Metro at various transfer stations;
- * residential backyard composting program;
- * waste reduction education program including display and promotional materials;
- * residential leaf and yard waste collection and composting programs (including centralized windrow facility);
- * reuse and donation centres located at the landfill sites and Regional transfer stations;
- * residential recycling depots and transfer stations for white goods, rural households, HHW, tires, etc. situated throughout the Region;
- * Durham Recycling Centre(MRF) owned and operated by the Region;
- * special curbside collection of Christmas trees.

According to figures provided by RIS, in 1992, 140,078 tonnes of residential waste were generated. Of this, 36,987 tonnes were diverted from landfill and 103,091 were disposed, equating to a residential diversion rate of approximately 26% for residential waste.

Collection, Processing and Costs of 3Rs Programs

The area municipalities undertake Blue Box collection and Durham Region reimburses each municipality via its Waste Management Reserve. In 1993, payments to the area municipalities were budgeted at \$1.9 million for Blue Box collection. In terms of processing, the Region also assumes some financial responsibility. A tipping fee of \$105.00 was charged in 1992 and \$70.00 per tonne was budgeted for 1993 for recyclable materials delivered to the Durham Recycling Centre. The tipping fee, however, is not anticipated to cover the total costs of collecting and processing recyclable materials. Operating shortfalls would be financed through the Waste Management Reserve and in 1993 this contribution represents \$2,596,000.

Since Regional Council adopted the 1993 Durham budget, Metropolitan Toronto revised its waste disposal fee that is charged to Durham Region (and subject to rebate) from \$152.25 per tonne to \$90.00 per tonne. As a result of this action, Durham Region budgeted its 3Rs processing fee at \$70.00 per tonne.

The gross operating expenditures incurred to provide 3Rs in Durham Region in 1992 totalled \$6.9 million. In 1992, net revenues totalled \$1.2 million, which included approximately \$472,300 in MOEE funding and \$753,884 in material sales. The net cost to provide 3Rs facilities and programs in 1992 for Durham Region approached \$5.7 million which equates to approximately \$28.00 per household. The net costs includes all cost to run 3Rs programs/facilities in Durham Region less funding from outside sources. The detailed analysis of costs is presented in Schedule B of this report.

Collection, Disposal and Financing of Landfill Waste

The Region of Durham principally makes use of Metro's Brock landfill located in Pickering (within Durham), while a smaller site is still maintained in Brock Township. The Brock site accepts waste only from Brock Township, and is scheduled to close in approximately six years.

The individual area municipalities are responsible for the physical collection and disposal of landfill waste. The Region is charged a tipping fee (\$152.25 per tonne) at the Metro owned landfill site, and they receive an offsetting rebate (\$83.86 per tonne) based on population and a waste generation factor, from Metro for residential (normal municipal) waste. Durham Region itself recaptures net disposal costs through a tipping fee charged to the area municipalities. In 1992 this tipping fee was \$52.00 per tonne and Durham increased this to \$70.00 per tonne in 1993.

3.3.2 Metropolitan Toronto

Metropolitan Toronto has implemented the following programs/facilities to divert waste from landfill:

- * residential weekly Blue Box recycling program including collection of bins of recyclables from multi-family units;
- * Igloo program that services both rural and high traffic urban public areas;
- * 10 household hazardous waste (HHW) depots and programs and two toxic taxis operated by Metro;
- * residential backyard composting program;
- * residential leaf and yard waste sites (6) and collection and composting programs;
- * waste reduction education program including Master Composter program and a

- consumer education program;
- * drop off depots/transfer stations that have bins specifically for cardboard, scrap metals, and recyclables;
- * 3 composting facilities and recycling depots in Scarborough, North York and Etobicoke operated by the local municipalities.
- * reuse activities and centres;
- * 3 material recycling facilities, 2 of which are located on Commissioner Street and the third is located on Dufferin Street in Toronto;
- * curbside collection of white goods in East York, Etobicoke (includes drop-off) and York.
- * special curbside collection of Christmas trees.

According to figures provided by RIS, in 1992, 1,069,790 tonnes of residential waste was generated. Of this, 201,117 tonnes, was diverted from landfill and 868,613 tonnes were disposed equating to a residential diversion rate of approximately 19%.

Collection, Processing and Costs of 3Rs Programs

The local municipalities undertake the collection of Blue Box material and the Cities of North York, Scarborough and Etobicoke operate their own composting and transfer facilities. Moreover, Metro compensates the local municipalities for their collection costs. Metro similarly offsets the three municipalities for the costs of the composting centres through a diversion credit system (at \$26.50 per tonne for leaves and \$35.00 per tonne for yard waste). That is, the municipalities were paid according to the volumes processed. (The City of Toronto does not take part in the direct Blue Box collection compensation program, but rather operates on a diversion credit system.) The funds for the diversion credits and Blue Box collection are drawn from the tipping fees at the Keele Valley and Brock Road landfill sites, via Metro's Waste Management Reserve. The processing of recyclable material is directly a Metro responsibility.

The gross operating expenditures incurred to provide 3Rs in Metro in 1992 totalled \$54.2 million. In 1992, net revenues totalled \$7.1 million. The net cost to provide 3Rs facilities and programs in 1992 for Metro approached \$47.0 million which equates to approximately \$26.00 per household. The net costs include all expenses needed to run 3Rs programs/facilities in Metro Region less funding from outside sources. The detailed analysis of costs is presented in Schedule B of this report.

Collection, Disposal and Financing of Landfill Waste

Landfill waste management facilities and programs include: Keele Valley landfill site and the Brock West Landfill site located in Pickering within Durham. Approximately 70% of Metro's waste is disposed at the Keele Valley landfill site, and the remainder is disposed at the Brock west landfill site.

At the present time, waste collection is an area municipality responsibility. The 1992 tipping fee for Metro landfills was \$152.25 per tonne. If loads contained any recyclables, a higher rate of

\$300.00/tonne was charged. Tipping fees for 1993 have now been reduced to \$90.00 per tonne and this became effective May 1, 1993.

3.3.3 The Regional Municipality of York

The Region of York is the only regional government within the GTA which does not co-ordinate the residential Blue Box program of its member municipalities. Each municipality is solely responsible for the implementation and operation of its own Blue Box recycling program. However, the Region does co-ordinate the HHW and organic yard waste programs. For ease of presentation we have presented the diversion programs/activities that are provided within the entire Region below.

- * residential Blue Box program;
- * collection of bins of materials from multi-family units;
- * residential recycling depot and transfer stations for goods that are particular to season or size including leaves, Christmas trees, brush and white goods;
- * household hazardous waste program including mobile depots and special collection days;
- * composting facility and provision of residential backyard composting bins;
- * two material recycling facilities scheduled to close and a Regional facility will open;
- * residential leaf and yard waste collection and composting programs;
- * reuse activities run by social organizations such as Goodwill;
- * promotional/educational programs;

According to figures provided by RIS, in 1992, 196,250 tonnes of residential waste was generated. Of this 54,101 tonnes was diverted from landfill and 142,150 tonnes was landfilled, equating to a residential diversion rate of approximately 28%. The Region has indicated that a pilot demonstration program designed to handle both recyclables and organic kitchen waste is scheduled to commence in September, 1993.

Collection, Processing and Costs of 3Rs Programs

In York Region, the area municipalities assume financial and operational responsibility for collection and processing of Blue Box materials and all other 3Rs programs other than HHW and organic yard waste. These programs are funded through the local municipal levies. The costs for processing are based on a cost sharing approach. Each municipality was assessed the gross cost of processing less the revenues received from sale of materials. The costs are allocated to each municipality based on population, and a waste generation factor, not actual tonnage. It should be noted that, in 1992, the Region of York assumed some financial responsibility for the household hazardous waste and the organic yard waste programs. However, a tipping fee was charged to finance the programs, but it did not cover the operating costs of the programs and the Region financed the shortfall. The shortfall was funded by the Regional Waste Management Reserve Fund. This fund consists mainly of royalty revenue that accumulates from

Metropolitan Toronto for the Keele Valley Landfill site.

The curbside collection of Blue Boxes in all of the area municipalities within York is contracted out to private firms, although for the most part the contractors use the area municipalities vehicles. York's Blue Box recycling system includes the operation of two municipally owned materials recycling facilities one located in Markham and the other in Richmond Hill. The facility in Markham services Aurora, King, Vaughan and Markham. The facility in Richmond Hill services East Gwillimbury, Newmarket, Whitchurch-Stouffville and Richmond Hill. Georgina's Blue Box recyclables are taken to the contractor's transfer station in Georgina where a processor from out of Region picks it up.

The Region of York offered a mobile HHW collection program for eleven weeks in 1992 (August 20 to October 31) in order to assist in the reduction of toxic materials going to landfill. Some toxic and hazardous materials (i.e. batteries, oil and paint, tires, propane containers) are recycled, however most of the hazardous and toxic materials collected are ultimately disposed of. York contracts with the private sector for processing and disposal of the materials. Approximately 10,407 vehicles delivered HHW in 1992. Collection is monitored as part of the Metro program therefore collection data is included in the Metro data.

In addition to their residential Blue Box program, York Region has provided an organic yard waste composting facility. Approximately 16,300 tonnes of yard waste was received in 1992 from residential and IC&I sources. In 1992, the Region charged the area municipalities and industrial, commercial and institutional establishments that used the facility a tipping fee of \$35.00 per tonne plus GST. Although residents that delivered their own yard waste to the facility were not charged a tipping fee. Any shortfalls in operations were financed through the Regional Waste Management Reserve Fund. Based on research completed by RIS, there are two privately owned facilities in York that are presently composting or producing animal feed from waste in the GTA.

Residential backyard composting is actively promoted in York. It is the responsibility of the lower tier municipalities, although the Region has helped with some promotional efforts. By the end of 1992, 23,500 composting units had been distributed.

All area municipalities provide some curbside collection to residents for white goods. Only King Township reported operating a drop off service at its landfill.

The gross operating expenditures incurred to provide 3Rs in York in 1992 totalled \$9.2 million. In 1992, net revenues totalled \$4.2 million. The net cost to provide 3Rs facilities and programs in 1992 for York approached \$4.9 million which equates to approximately \$21.00 per household. The net costs includes all cost to run 3Rs programs/facilities in York Region less funding from outside sources. The detailed analysis of costs is presented in Schedule B of this report.

Collection, and Disposal Financing of Landfill Waste

Landfill waste management facilities and programs include the Keele Valley landfill site that Metro Toronto owns and operates, Georgina's landfill site and two small landfills in King Township.

The majority of York Region's solid waste is disposed in Metro's Keele Valley landfill. The disposal needs of some of the smaller communities in the northern part of the Region are served by landfills in Georgina and King Townships.

The individual area municipalities are responsible for the physical collection and disposal of landfill waste. The area municipalities are charged a tipping fee of \$152.25 per tonne by Metro, however they receive a rebate based on the formula of 1.3 tonnes per household. In 1992, the rebate equated to \$83.86 per tonne. The Metro tipping fees decreased to \$90.00 per tonne as at May 1, 1993 and as at the date of this report they are anticipated to be \$50.00 for 1994.

The collection costs are passed on through the area municipalities tax bill, while the disposal costs are passed through on the Regional levy. The tipping fee is based on actual tonnages while the rebate is based on theoretical tonnages and population.

3.3.4 The Regional Municipality of Peel

The Region of Peel has implemented the following programs/facilities to divert waste from landfill:

- * residential Blue Box program;
- * collection of bin of recyclables from multi-family units;
- * pilot demonstration program in Caledon for commercial Blue Boxes;
- * privately owned and operated MRF located in Mississauga for Brampton and Mississauga materials;
- * privately owned and operated MRF/transfer stations (Bolton & Caledon);
- * household hazardous waste program operated in Brampton at the Britannia landfill site and Bolton Community Centre;
- * depots located at transfer stations of rural, self-haulers and multi-family dwellings not offered curbside;
- * salvaging centre at the Caledon landfill site;
- * recycling drop off area at the Britannia Sanitary Landfill site;
- * residential backyard composting program and composting area at Britannia and Caledon landfill site;
- * waste reduction education program including display and promotional materials;
- * residential leaf and yard waste collection program;
- * white goods pick up in Brampton and Mississauga and drop off in Caledon;
- * 2 reusable goods exchanges operated by the Region (Albion and Brampton); in Caledon;

- * compost demonstration site for pilot wet/dry projects;
- * special curbside collection of Christmas trees.

According to figures provided by RIS, in 1992, 313,296 tonnes of residential volume of waste was generated. Of this 59,967 tonnes was diverted from landfill and 253,329 tonnes, was disposed equating to a diversion rate of approximately 20% for residential waste. The Region has indicated a need for a major waste diversion facility to help realize the provincial targets. Officials of the Region of Peel have expressed interest in the central composting facility which is currently under review in the Region of Halton.

Collection, Processing and Costs of 3Rs Programs

The administration of the 3Rs programs in Peel Region is handled by the three area municipalities. The individual municipalities arrange the physical collection and processing of recyclable materials. All three area municipalities are responsible for and actively participate in the residential Blue Box program although the type of material accepted varies. The residential Blue Box program is a well established municipal collection program serving over 240,228 households, including 64,439 apartment buildings and 56,862 multiple-family dwellings. The area municipalities have also expanded their residential program to include "special" residential wastes. Materials collected from each municipal special residential collection program include leaves, Christmas trees, brush and phone books.

In addition to the residential Blue Box program, Caledon implemented a town wide user pay recycling system for its industrial and commercial sectors in late 1991. With the exception of Bolton, collection of recyclables is incorporated into Caledon's regular residential collection system.

In addition to the residential Blue Box program, a recyclable materials drop-off area at the Britannia Sanitary Landfill site is available for use by residents and small businesses who wish to deposit materials such as brush, tires, drywall, clean fill, concrete, asphalt, and cardboard.

The cities of Brampton and Mississauga offer pick up of large household appliances for recycling on regular garbage days. Appliances that are still in usable condition may be taken to any one of the three recycling depots in the Region.

The recyclable materials collected curbside in Mississauga and Brampton are delivered to a private MRF in Mississauga. The materials collected curbside in Caledon are taken to a transfer station within the Region, where the materials are inventoried and sold to material brokers directly.

The Region provides a combination of depots (Mississauga, Brampton, Albion and Caledon) and HHW days for the collection of liquid hazardous wastes, used oil, car batteries, and propane cylinders. It is anticipated that approximately 408,500 litres of HHW would be diverted from landfill in 1993. This does not include an estimated 11,800 car batteries and 3,450 propane units. The depots also accept recyclable materials such as Blue Box materials, metal, tires, wood,

cardboard and newspaper.

All three municipalities have their own leaf and yard waste composting programs. Until 1992 Brampton owned and operated their own 5 acre site. The operation is now contracted out. Mississauga collects their leaf and yard waste which is delivered to the Region's compost facility at the Britannia landfill site. Some of the yard waste (20%) is handled at the City's centralized demonstration facility. Leaf and yard waste generated by residents of Caledon is collected and composted at the Caledon landfill site.

In 1989, the Region began a reusable goods exchange program at the Caledon and Albion Sanitary Landfill Sites. There are also new reusable goods exchanges located at the recycling depots in Brampton, Caledon and Albion.

Mississauga offers curbside pick up of white-goods. Caledon provides a drop off, while Brampton has both a drop off and curbside pick up.

The Region of Peel has been actively providing backyard composters since 1985. In the period 1990 to 1992 the Region had provided 50,335 backyard composting bins to Peel residents.

The gross operating expenditures incurred to provide 3Rs in Peel in 1992 totalled \$11.6 million. In 1992, net revenues totalled \$4.1 million. The net cost to provide 3Rs facilities and programs in 1992 for Peel approached \$7.4 million which equates to approximately \$20.00 per household. The net costs includes all cost to run 3Rs programs/facilities in Peel Region less funding from outside sources. The detailed analysis of costs is presented in Schedule B of this report.

Collection, Disposal and Financing of Landfill Waste

Landfill waste management facilities and programs include the Britannia landfill site with small quantities going to the Caledon and Albion landfill sites. Peel Region's waste is disposed primarily in the Britannia landfill site, with small quantities going to the Caledon and Albion landfill sites. In addition, municipal waste goes to the Peel Resource Recovery facility which commenced operations in February, 1992.

The individual area municipalities are responsible for the physical collection and disposal of landfill waste. The Region's tipping fee is \$150.00, however in April 1993, Peel Regional Council voted to reduce its landfill tipping fee to \$80.00/tonne for loads of mixed waste.

3.3.5 Regional Municipality of Halton

The Region of Halton has implemented the following programs/facilities to divert waste from landfill:

- * bi-weekly Blue Box recycling program;
- * "Shared Responsibility Demonstration Project" whereby the Region is responsible exclusively for the collection of recyclables and the Province in conjunction with

the industrial/commercial sector are responsible for the provision of the material recycling facility (MRF);

- * Igloo program that services both rural and high traffic urban public areas;
- * household hazardous waste (HHW) programs in Burlington and Milton;
- * pilot HHW collection program that includes depots and the distribution of 500 household hazardous waste containers to area residents;
- * residential backyard composting program;
- * waste reduction education program including display and promotional materials;
- * Regional transfer stations that have bins specifically for cardboard, scrap metals, and recyclables;
- * 4 waste container stations/depots designed to accept residential and some IC&I recyclable materials;
- * recycling depots run by Waste Wise in Halton Hills for materials not accepted by the Blue Box;
- * 3 reuse centres;
- * residential leaf and yard waste programs;
- * special curbside collection of Christmas trees, pumpkins and white goods.

According to figures provided by RIS, in 1992, 153,193 tonnes of residential volume of waste was generated. Of this 64,393 tonnes was diverted from landfill and 88,800 tonnes, was disposed equating to a residential diversion rate of approximately 34% for residential waste. The Region has indicated that a major waste diversion facility in the form of a central composting facility is under review.

Collection, Processing and Costs of 3Rs Programs

Commencing February 1, 1993 the curbside collection of Blue Box materials in Halton Region was tendered by the Region out to a private hauler. The new contract initiated a bi-weekly collection cycle as well as expanded the range of materials collected. Items such as aluminum foil, HDPE, polystyrene and boxboard are now collected.

In addition, the arrangement required the contractor to assume the maintenance of the existing recycling truck fleet thereby reducing overall fleet maintenance costs. The contract period is five years and includes all the area municipalities.

The new agreement allows for collection of recyclable materials at single and multi-family residential units and apartment buildings but no longer allows for collection at institutional facilities such as non-profit organizations, municipal offices, and local hospitals.

The area municipalities have also expanded their residential program to include "special" wastes. Special materials collected include leaves, Christmas trees, and brush.

Coinciding with the new residential Blue Box collection contract is the introduction of the previously mentioned "Shared Responsibility Demonstration Project", whereby the Region is financially responsible for the collection of recyclables while the Province in conjunction with the

commercial/industrial sector (Bronte 3Rs) is responsible for operation of the materials recycling facility (MRF). The Province has provided a grant (\$1.4 million) to the contractor, via the Region, for the costs associated with the processing of recyclable materials.

One of the project's many objectives is to increase both the volume and range of materials collected and processed. Halton receives from MOEE \$20.00/tonne in revenues for all residential recyclables delivered to the facility.

At the time of writing officials at Halton Region and MOEE indicated that this pilot demonstration program is in its second and final year and may or may not continue. Halton Region also provides container facilities at the landfill site which accept recyclables.

With respect to the Household Hazardous Waste Program, consideration is being given to expansion of the program to once weekly, compared to the current once monthly depot openings in Burlington. In addition, the Region is conducting a pilot HHW collection program whereby 500 household hazardous waste containers will be distributed to residents. The objective of this collection procedure is to reduce the costs of collection by providing the container to transport the materials to a central depot. The capital cost was financed through corporate donations.

At present, Halton has a contracted Igloo container collection program whereby the containers are placed at strategic locations for the collection of recyclables.

The gross operating expenditures incurred to provide 3Rs in Halton in 1992 totalled \$7.5 million. In 1992, net revenues totalled \$2.1 million. The net cost to provide 3Rs facilities and programs in 1992 for Halton approached \$5.4 million which equates to approximately \$33.00 per household. The net costs includes all cost to run 3Rs programs/facilities in Halton Region less funding from outside sources. The detailed analysis of costs is presented in Schedule B of this report.

Collection and Disposal of Landfill Waste

Landfill waste management facilities and programs include:

- * \$57.4 million for a new waste management site which commenced operations in late 1992;
- * closed landfill sites which still require maintenance and monitoring;
- * container stations for receipt of small amounts of residential and HHW waste (closed late 1992).

The opening of the landfill site terminated the export of landfill waste to disposal sites outside Halton Region.

At the present time, waste collection is an area municipal responsibility while waste disposal is a Regional (levy) responsibility.

The tipping fee for disposal has remained constant for 1993 at \$150 per tonne despite declining tonnages.

3.4 PROVINCIAL FUNDING

The Ministry of the Environment and Energy provides funding and technical assistance for projects which help achieve the Provincial waste diversion targets. There are a number of different grants/programs currently in place which are described below. The continuation of these programs, however, is currently under review.

3.4.1 Municipal Recycling Support Grants

These grants help the municipalities with the planning, implementation, operation and expansion of recycling projects. They help to reduce waste disposal requirements and provide other environmental benefits to Ontario. More specifically the municipal recycling support grants cover:

- * Capital costs: support for the costs of facilities and equipment needed by the project.
- * Operating costs: support for the cost of operating municipal recycling programs. Grant amounts are based on the lesser of a percentage of total costs or the net operational cost (costs less revenues). New municipalities can receive up to five years of funding. In year one, they are eligible to receive up to 50 percent funding; 40 percent in year two and 33 percent in each of the three remaining years. Municipalities that were on the program as of April 1, 1991, and those that have expended the five year eligibility period on or prior to that date, are eligible to receive up to three additional years of funding at 33 percent.
- * Feasibility studies: municipalities can receive grants up to 50 percent of the costs of feasibility studies to implement a recycling program
- * Promotion and advertising: grants up to 50 percent of promotional and advertising costs over five years.
- * Demonstration projects: grants up to 100 percent for the costs of demonstration projects designed to develop innovative recycling methods or technologies.
- * Education projects: grants up to \$15,000 to support unique educational projects designed to raise the awareness and understanding of the 3Rs.

The Table 3-4 summarizes the Municipal Recycling Support Grant Expenditures for the fiscal years 1989 to 1993.

Table 3-4

**Municipal Recycling Support Grant
in the GTA**

Year	Capital (\$)	Operating (\$)	Total (\$)
1989	1,256,321	1,484,695	2,741,016
1990	3,060,397	3,741,056	6,801,453
1991	3,597,261	9,245,832	12,843,093
1992	1,112,187	6,314,857	7,427,044
1993	34,539	525,918	560,457
Total	9,060,705	21,312,358	30,373,063

Source: MOEE, Waste Reduction Office

Table 3-5

**Municipal Reduction/Reuse Grants
in the GTA**

Year	Capital (\$)	Operating (\$)	Total (\$)	Composting Units
1989	377,607	966	378,573	16,180
1990	611,678	77,123	688,801	24,720
1991	1,695,492	76,828	1,772,320	85,145
1992	2,722,018	238,861	2,960,879	94,346
1993	478,694	9,421	488,115	15,482
Total	5,885,489	403,199	6,288,688	235,873

Source: MOEE, Waste Reduction Office

3.4.2 Municipal Reduction/Reuse Grants

These grants are aimed at reducing the amount of waste going into the municipal waste stream. More specifically, these include projects to encourage less packaging, home composting projects and the development of new product approaches. The grants cover:

- * Capital costs: grants of up to 66 percent of the purchase cost of home composters. Support for other types of reduction projects are considered on a case-by-case basis.
- * Developmental costs: development of creative materials or approaches may be funded up to 100 percent to a limit of \$25,000.
- * Promotional costs: grants of up to 50 percent are available for municipal solid waste

audits and public education.

The Table 3-5 summarizes the Municipal Reduction/Reuse Program Expenditures for the fiscal years 1989 to 1993.

3.4.3 3Rs Funding Program

These grants are for projects that recover materials from the mixed waste stream. Assistance is available to establish facilities to recover or process paper, compost, aluminum, steel, glass, plastic or other materials. Grants are available for:

- * Capital costs: grants up to one third of the costs of facilities;
- * Research/development costs: grants up to 100 percent of the projects cost of demonstrating or evaluating the proposal

The following table summarizes the 3Rs Funding Program Expenditures for the fiscal years 1990 to 1992.

Table 3-6

**3Rs Funding Program
in the GTA**

Year	Capital Expenditure
1990	281,819
1991	520,561
1992	2,699,368
Total	3,501,748

Source: MOEE, Waste Reduction Office

3.4.4 Household Hazardous Waste Collection Program

This program helps to divert hazardous waste away from municipal landfills and sewage treatment systems. Grants are available for special waste days/weekends or events and permanent depots. The amount of funding is limited to 50 percent of the incurred costs up to \$5,000 per year. Funding can increase by an additional \$10,000 for a total maximum grant of \$15,000, or a part of \$10,000 equivalent of the collected volume of waste diverted from disposal to reuse, recycling or refining or 50 percent of the total project cost, which ever is less.

3.4.5 Financial Assistance Program

The program assists with the implementation of new or expanded existing waste management facilities such as landfill sites, transfer stations and processing facilities. Eligible activities range from capital costs associated with construction, equipment, land and design, and includes Environmental Assessment hearing costs if associated with a master plan. Private waste management facilities are not funded except where a municipality can demonstrate that it does not have the resources to establish and operate a waste management facility. Applicants are placed in groups based on population in order to ensure fair and equitable distribution of funds.

3.5 PRIVATE FUNDING

OMMRI: Corporations in Support of Recycling is founded on a forerunner organization, Ontario Multi-Material Recycling Incorporated, whose membership comprises of the soft drink industry, and its container and container material suppliers. This organization worked closely with municipalities and the Ministry of the Environment and Energy to increase the number of "Blue Box" households to two million from 150,000, the number of boxes in use in 1986. It also helped fund recycling programs for 144,000 apartment units and 113,000 rural residences. Although their original four year, \$20 million mandate has been met, the soft drink industry continues to support multi-material recycling through OMMRI: Corporations in Support of Recycling.

At the beginning of 1990, six industry sectors responded to the Government of Ontario's challenge to broaden private sector involvement in waste reduction activities. Signing a Memorandum of Understanding with the government, they established a cooperative arrangement to help develop a province-wide waste reduction system based on the Blue Box recycling program. Industry agreed to provide \$45 million over five years, 1990 to 1994, to help fund the system. It created OMMRI: Corporations in Support of Recycling to distribute the funds.

OMMRI currently contributes one-third of the capital costs of Blue Boxes, recycling trucks and processing equipment to municipal recycling organizations as well as assistance for costs associated with promoting, launching and expanding municipal recycling programs.

As of January 8, 1992 OMMRI has put all requests for funding in the GTA on hold. According to representatives of OMMRI they will continue to place all funding requests (except for the Crinc operation in Metro that commenced operations in May, 1992) on hold until the Government honours the Memorandum of Understanding that calls for "level playing field legislation" whereby all industry would be required to become involved in the funding of recycling activities. It should be noted that OMMRI is paying outstanding commitments in 1993.

Future initiatives of OMMRI's include a cooperative program with the Ontario Soft Drink

Association's (OSDA) which developed a Top-Up formula to ensure that the cost of recycling soft drink containers in the Blue Box program is not born by the municipal tax payer. In 1992, the operating subsidy was determined to be \$50.00 per tonne of soft drink material recycled. The program has processed approximately \$380,000 in operating grants so far.

3.6 FUTURE 3Rs CAPITAL COMMITMENTS

This section of the report presents the analysis of the committed capital programs for future diversion activities. The analysis included a review of each Region's and Area Municipalities' most recent current and five year capital budgets and development charges study where available. In the case of Durham and York Regions the most recent capital budget available was 1993 while in Metro, Peel and Halton Regions the 1994 capital budgets were utilized. It should be noted that, in the case of Peel, the 1994 Council approved capital budget was utilized. Any changes that may impact the committed programs, as a result of internal management reports, were dealt with in the costs that RIS provided for the alternative systems analysis. In addition, the analysis included telephone interviews with various Regional staff to augment the budget information provided.

Table 3-7

**3Rs Capital Commitments
in the GTA**

Region	Most Recent Commitments	Five Year Commitments	Not Identified in Budgets	Total Program
Durham	388,400	2,800,000		3,188,400
Metro	1,567,000	2,121,000		3,688,000
York	2,785,100			2,785,100
Peel	24,100,000	58,200,000		82,300,000
Halton	0	252,000	25,000,000	25,252,000
Total GTA	28,840,500	63,373,000	25,252,000	117,213,500

Source: 1993 and/or 1994 Municipal Capital Budgets

The analysis includes new capital or program items that would potentially change existing financing requirements. More specifically, the activities presented only include expenditures that could potentially increase the amount of tonnage diverted, therefore inflation increases to existing

budget items have not been included.

Table 3-7 presents a summary of the 1993/94 capital and program commitments as well as capital and program commitments for the years 1994/95 to 1997/98, for the entire GTA. In the case of Halton Region, Table 3-7 also includes other items that have received Council approval, but were not included in the capital budget.

3.6.1 Durham Region

The review of Durham Region's 1993 Current and Capital Budgets and five year forecast for 3Rs indicated the following:

\$2.7 million has been allocated in the 1993 capital budget for the design, construction and equipment for an expansion to the Regional Recycling Centre. Approximately, \$302,400 has been allocated in 1993 and the remaining \$2.4 million in the years 1994 to 1997.

\$486,000 has been allocated in the 1993 operating budget as a result of the introduction of the sale of home composters, and as a result of changes related to 3Rs programs.

Durham Region and the local municipalities anticipate spending a total of \$3.1 million (\$388,400 plus \$2.8 million) over the next five years. This total capital cost, as modified by RIS, has been used to evaluate the relative effects of each of the alternative diversion systems.

3.6.2 Metropolitan Toronto

The review of Metro Toronto's 1994 Capital Budget and five year forecast for Waste Diversion indicated the following had been committed:

\$2.4 million has been allocated in the capital budget for equipment for the MRF. and depot on Commissioner Street. Approximately \$704,000 has been allocated in 1994.

\$3.5 million has been allocated for recycling programs with \$1.4 million being included in the 1994 capital budget.

\$98,000 has been allocated in the year 1994 for the purchase of equipment and

construction of a special wood shredding facility.

Metro Region and the local municipalities anticipate spending a total of \$3.6 million (\$1.5 million plus \$2.1 million) over the next five years (1995-1998). The budget also indicates that \$304,000 of this capital program will continue after 1998. The capital cost used to evaluate the relative effects of each of the alternative diversion systems includes the \$304,000 committed post 1998. This total capital cost, as modified by RIS, has been used to evaluate the relative effects of each of the alternative diversion systems.

It should be noted that Metro has decreased its committed capital expenditures considerably in its 1994 capital budget relative to 1993. An examination of the 1993 capital budget and five year program indicated that approximately \$140.0 million had been committed to 3Rs expenditures previously.

3.6.3 York Region

A review of York Region's 1991 Development Charge Policy Report and the 1993 Budget Detail for Environmental Services including 3Rs indicated the following:

\$2.2 million has been allocated in the budget for a Regional Materials Recovery Facility. The existing municipal facilities will terminate operations when the Regional facility commences operations.

\$445,100 has been allocated in the budget as a result of an increase in payments to contractors as a result of an increase in the service level in the Household Hazardous Waste Program.

\$116,000 has been allocated in the budget as a result of an increase in payments to contractors as a result of an increase in the service level in the Organic Yard Waste operations.

York Region and the local municipalities anticipate spending a total of \$2.7 million in 1993. It is important to note that at the present time the Region of York does not prepare a five year capital forecast for Waste Management. Therefore, the above mentioned 1993 total capital cost of \$2.7 million has been used to evaluate the relative effects of each of the alternative diversion systems. This total capital cost, as modified by RIS, has been used to evaluate the relative effects of each of the alternative diversion systems.

3.6.4 Peel Region

A review of Peel Region's 1994 Capital and Operating Budgets for Waste Diversion indicated the following:

\$24.0 million has been allocated to design and construct seven community recycling centres/depots/satellite drop-off facilities: three in Mississauga, two in Brampton and one in Caledon which would accept recyclables, household hazardous waste, reusable items and residential waste. \$2.0 million has been budgeted in 1994 and \$22.0 million has been budgeted for the facilities between the years 1995 to 1998. According to officials at the Region, the facilities may or may not proceed.

\$17.0 million has been allocated in the 1994 budget for the design and construction of a Material Recovery Facility to process residential recyclable materials from Blue Box collections, Community Recycling Centres and the new mini depots.

\$18.2 million has been budgeted to establish a central composting facility either in Peel or in conjunction with Halton Region in the years 1995 to 1998. Due to the uncertainty of the configuration of the facility, incremental operating costs have not been included in this analysis.

\$300,000 has been allocated in the budgets, for the design and construction of mini recycling depots to service residents who cannot be serviced by conventional methods (i.e. container stations).

\$500,000 has been allocated in the budgets to cover unexpected expenses relating to future facilities and planning. \$100,000 has been allocated in 1994 while \$400,000 has been allocated in the years 1995 to 1998.

\$5.0 million has been allocated in the budgets for the design, construction and equipment related to a yard waste composting facility.

\$17.2 million has been allocated in the budgets for to supply household collection containers. \$2.2 million has been allocated in 1995 and the remaining \$15.0 million has been allocated in 1998.

Peel Region and the local municipalities anticipate spending a total of \$82.3 million (\$24.1 million in 1994 plus \$58.2 million in the years 1995 to 1998) over the next five years. This total capital cost, as modified by RIS, has been used to evaluate the relative effects of each of the alternative diversion systems.

3.6.5 Halton Region

The review of Halton Region's 1994 Capital and Operating Budgets and five year forecast for 3Rs indicated that the following had been committed:

\$252,000 has been allocated in the 1994 capital budget for repairs and renovations to the MRF located in Oakville.

\$25.0 million has been allocated for the design and construction of a Regional Composting Facility. At the present time the facility is under review while the Region works out the details of ownership and sizing. It is important to note that no provision has been made for the facility in the 1994 Capital Budget and five year forecast. However, we have assumed that the Region would proceed with the facility and incur the above mentioned capital cost.

Halton Region and the local municipalities anticipate spending a total of \$25.2 million (\$252,000 in 1994 plus \$25.0 million in 1995 to 1998) over the next five years.

4.0 MUNICIPAL FINANCE PROFILES

This chapter presents financial profiles for each of the Regions within the GTA. The profiles are presented as baseline background information and will be used to test the alternative diversion systems to isolate the financial implications of the alternative systems. Although the baseline financial profiles are presented, no intention has been made to assess the alternative diversion systems in terms of the financial capability of the individual municipalities in the GTA and their abilities to absorb additional costs. Before detailing the individual financial profiles, an overview of selected municipal finance items is presented.

As discussed in the methodology section of this report, the financial profiles are based on 1992 (MARS) data, that being the most recent complete set of data available. To supplement the MARS information the Ontario Gazette was used to obtain the 1993 equalization factors to apply to the residential and commercial assessments. The equalization factor was used to bring all Regions to the same base year. The equalization factors are revised every three years. Prior to the 1993 revision, 1990 factors were the most recent. The 1993 equalization factors were used as they were the most recent and represent more realistically the current real estate market characteristics. They, however, do not directly match with the 1992 financial data used in this analysis. Due to this, a review of property value changes between 1992 and 1993 was made to determine a possible variance range.

Based on a review of the "Survey of Canadian House Prices for Toronto and Surrounding Areas (Fall 1993)," prepared by Royal LePage, it is clear that property values in York and Durham were greater in 1992 than in 1993. On the other hand, variations (both increases and decreases) do occur in Peel and Metro Toronto. This is derived from a sampling of standard two-storey home prices throughout the GTA. The change from 1992 is relevant in terms of the equalization factors that were used in this report to arrive at equalized property assessment in each municipality. Due to the change in year-to-year value, Durham Region's equalized assessment may be understated by between 2% to 9%. In York Region, these values may be understated by 2% to 8% and Halton -- 5%. In Metro and Peel, housing prices in same areas actually rose, while others declined. Therefore depending on aggregate changes, range of variance implies that the equalized assessment may be understated by as much as 15 and/or overstated by 6% in Metro and understated by 4% and overstated by 2% in Peel.

4.1 OVERVIEW

Each of the GTA Regions has very different financial characteristics which are impacted by the following economic indicators:

- * the size of the commercial and industrial sector within the Region's tax base;
- * the sources of revenue available to finance expenditures;
- * the actual level of service expenditures;
- * the amount of debt carried by the tax payers;
- * the amount of reserves available to fund expenditures.
- * the actual (or average) level of property taxes.

It can be seen that each Region has a different mix and blend of financial characteristics. Specifically, after reviewing the financial base information the following pattern can be discerned:

- * Metropolitan Toronto is able to undertake much more costly service expenditures while maintaining similar tax levels as other Regions due to its large diversified commercial and industrial tax base (at 45 percent of total property assessment - Table 4-1) to draw on;
- * The Region of Durham and Metropolitan Toronto rely more on Provincial Grants (at 30 percent of total revenue -- Table 4-1) than the other GTA Regions. This may be partly a result of the Province's funding formulae for general welfare assistance.
- * The Region of Halton has the lowest level of operating expenditures per household (at \$3,269 per household -- Table 4-1) for combined Regional and local service operations than the remainder of the GTA Regions. Metro has the highest level of operating expenditures at \$6,038 per household partly due to some of its services such as the TTC that are not provided in other GTA Regions.
- * The Region of Halton maintains the lowest level of per household expenditures for local service operations (\$1,430 -- Table 4-1) and the second lowest for Regional operations (\$1,572).

TABLE 4-1

GTA EXISTING FINANCIAL CONDITIONS (1992)

	DURHAM		METRO		YORK		PEEL		HALTON	
	(\$)	(%)	(\$)	(%)	(\$)	(%)	(\$)	(%)	(\$)	(%)
HOUSEHOLDS	140,831		875,021		161,654		236,775		111,586	
ASSESSMENT										
Residential %		85		55		73		82		74
Commercial %		15		45		27		18		26
AVERAGE TAX (\$/ Hsld)										
Local	676	22	479	17	582	18	546	18	604	21
Regional	548	18	677	24	368	11	478	16	408	14
Schools	1,562	50	1,416	51	2,072	63	1,740	57	1,573	55
Other Direct Charges	328	11	199	7	273	8	314	10	278	10
Total	3,114	100	2,771	100	3,295	100	3,078	100	2,863	100
REVENUE (\$000's)										
Municipal Property Taxation										
Residential & Farm	150,275	31	981,779	21	166,331	22	243,261	23	117,242	28
Comm/Ind./Bus.	69,236	14	1,061,613	23	77,948	10	149,449	14	53,504	13
Other Special Charges	0	0	105,028	2	8,312	1	0	0	0	0
School Taxes	259,601	54	2,505,252	54	496,925	66	653,867	62	242,412	59
Total	479,112	100	4,653,672	100	749,516	100	1,046,577	100	413,158	100
REVENUE DISTRIBUTION (\$000's)										
Property Taxation (Local)*	219,512	38	2,148,420	41	252,590	46	392,711	45	170,746	47
Con/Unconditional Grants	170,573	30	1,578,194	30	143,211	26	223,525	25	87,360	24
Payments in Lieu of Taxes	11,852	2	152,131	3	3,078	1	20,999	2	6,016	2
Fees & Service Charges	59,025	10	421,228	8	60,533	11	62,038	7	23,683	7
Program Revenues	111,548	19	896,564	17	87,315	16	181,478	21	76,098	21
Total	572,510	100	5,196,537	100	546,727	100	880,751	100	363,903	100
OPERATING EXPENDITURES (\$/hsld)	4,057		6,038		3,667		3,730		3,269	
CAPITAL FUND REVENUES (\$/hsld)	1,155		807		998		1,061		1,272	
CAPITAL FUND EXPENDITURES (\$/hsld)	753		860		862		800		1,037	
LONG TERM DEBT (\$/hsld)	511		1,200		826		618		1,346	
DEBT CHARGES (\$/hsld)	94		263		94		160		237	
RESERVES (\$/hsld)	1,576		1,107		1,796		3,428		1,589	

*Differences in over/under levies have been added to Regional levy.

SOURCE: MARS 1992, Ministry of Municipal Affairs

- * The Regions of Durham and Peel have the lowest levels of debt (at \$511 and \$618 per household, respectively) of all the GTA Regions. This results in a low debt capacity guideline, as provided by the Ministry of Municipal Affairs. (This excludes debt related to the York-Durham Sewage System which is Provincially operated.)

The debt capacity guideline was previously administered by the Ontario Municipal Board and is now within the auspices of the Ministry of Municipal Affairs (MMA). (See Bill 165 An Act to Amend Certain Acts Related to Municipalities -- Royal Assent June 25, 1992 and Ontario Regulations 710/92 made under the Municipal Act.) It is defined as debt charges (principal and interest) taken as a percentage of total operating expenditures. For the Regions of Durham and York these ratios have been calculated at 2.3 percent in Durham and 2.6 percent in York.

(Peel Region does not use this guideline for internal purposes since it ignores uncontrollable Provincial program expenses administered at the municipal level. Notwithstanding this, and despite disentanglement efforts, the guideline is still official MMA policy.)

- * The Region of Peel has the largest level of reserve funds at \$3,428 per household (Table 4-1) as compared to the other GTA Regions. Among other things these funds are used to finance 3Rs programs.
- * All Regions rely heavily (38 to 47%) on local property taxation as a source of revenue.

4.1.1 Comparative Tax Levels

A relatively consistent level of municipal taxation, for local and Regional purposes, excluding schools but including user charges such as water rates, was found. In 1992, municipal taxation per household in each of the GTA Regions was:

Table 4-2

1992
Average Tax Levels Per Household
(Excluding Schools)

Durham Region	\$ 1,553
Metro Region	1,355
Peel Region	1,337
Halton Region	1,290
York Region	1,223

Source: Future Urban Research

The taxation data are summarized on Table 4-1 and also presented graphically in this chapter.

4.2 GTA Financial Summary

The following section highlights selected municipal finance information for the GTA Regions. This information is reproduced from Table 4-1 and is drawn from Schedule A, which presents detailed financial summaries for each of the GTA Regions as well as for all the individual area municipalities.

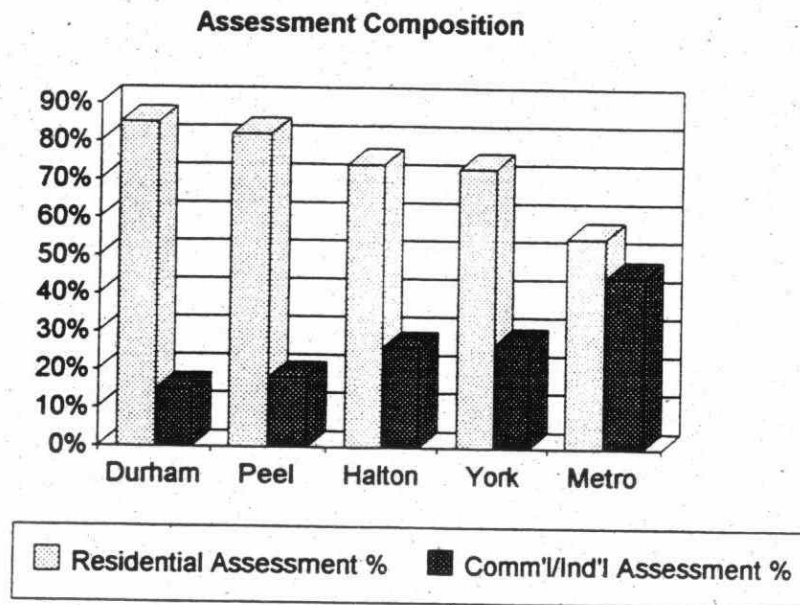
The purpose of the analysis was to quantify the financial position of the GTA Regions and to evaluate whether their financial positions should preclude them from entertaining any of the alternative systems. The analysis will indicate that from the perspective of debt and debt charges, operating expenditures, revenues and even future capital expenditures that each of the GTA Regions would be capable of entertaining the alternative systems put forth in Chapter 5 of this report. However, each alternative would have a different effect on the financial situation in each of the GTA Regions, which is also presented and discussed in Chapter 5.

Property Assessment

When the relative sizes of the residential versus the commercial/industrial sectors are compared, the data suggests that Halton, Peel and York are similar, with residential sectors representing between 73 and 74 percent of the tax base. Metro Region on the other hand, maintains a larger commercial/industrial sector at 45 percent with the residential sector making up the remaining difference. This is significant from a taxation point of view, as the residential sector pays taxes at a discounted mill rate (15 percent), while the commercial/industrial sector pays business taxes in addition to property taxes. Durham Region maintains the smallest commercial/industrial

sector at just 15 percent of the tax base and therefore has a lower percentage of business tax paid in addition to property taxes.

Figure 4-1

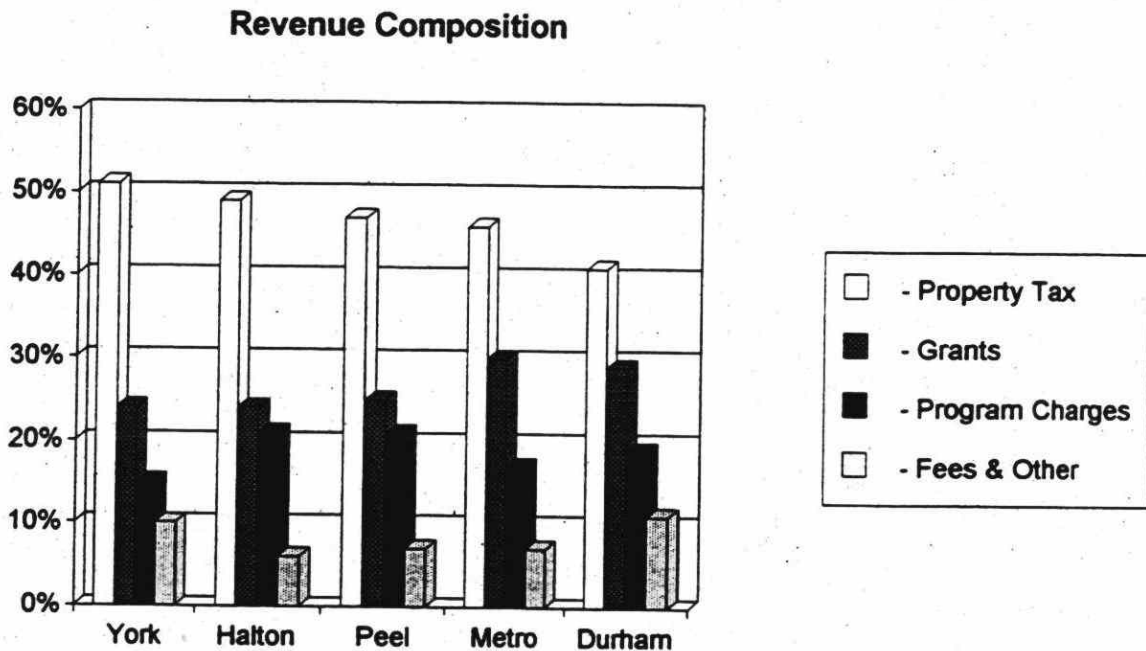


Source: MARS, 1992, Ministry of Municipal Affairs

Revenue Composition

While the Regions of Halton and York rely most heavily on property taxation (47 percent of revenues) as a funding source, Durham and Metro Toronto have the least reliance on taxation (38 percent and 41 percent, respectively). In both cases, the Region of Durham and Metro Toronto rely more on Provincial Grants (30 percent) of revenues.

Figure 4-2



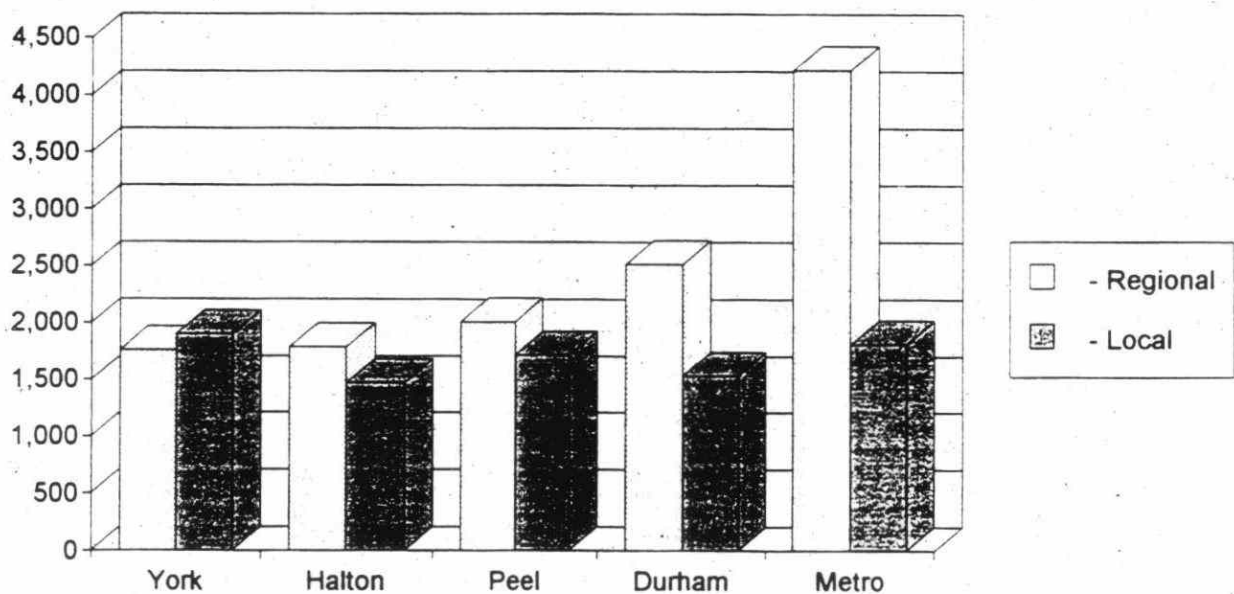
Source: MARS, 1992, Ministry of Municipal Affairs

Operating Expenditures

In the GTA, total service expenditures, exceeded \$7.6 billion in 1992. This was composed of: Halton -- \$365 million; York -- \$593 million; Durham -- \$571 million; Peel -- \$883 million; and, Metropolitan Toronto -- \$5.3 billion. When expressed on a per household basis, service expenditures range as high as \$6,038 in Metro for both local and regional purposes to: \$3,269 in Halton Region; \$3,730 in Peel Region; \$4,057 in Durham and \$3,667 in York Region. The relatively high service expenditures in Metro include services that are not provided in the other GTA Regions such as, the TTC, Housing and special event programs.

Figure 4-3

Operating Expenditures Per Household



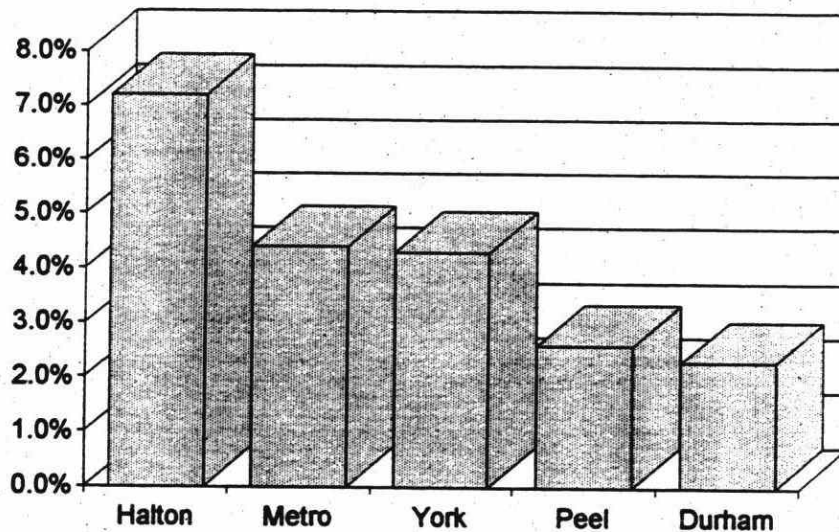
Source: MARS, 1992, Ministry of Municipal Affairs

Debt and Debt Charges

In the GTA, total long term liabilities in 1992 approached \$1.5 billion. This consisted of: Durham \$72 million; York -- \$133 million; Halton -- \$150 million; Peel -- \$146 million; and Metro -- \$1.0 billion. On a per household basis, debt per household ranges from \$1,346 in Halton to \$1,200 in Metro, \$826 in York, \$618 in Peel and \$511 in Durham. While Halton, Metro and York rely more on debenture financing, Peel and Durham fund more of their capital expenditures directly from the tax levy. When expressed as a percentage of operating expenditures, debt charges approach 7.2 percent in Halton, 4.3 percent in Peel, 4.4 percent in Metro, 2.6 percent in York and 2.3 percent in Durham.

Figure 4-4

Debt Charges as a Percent of Expenditures



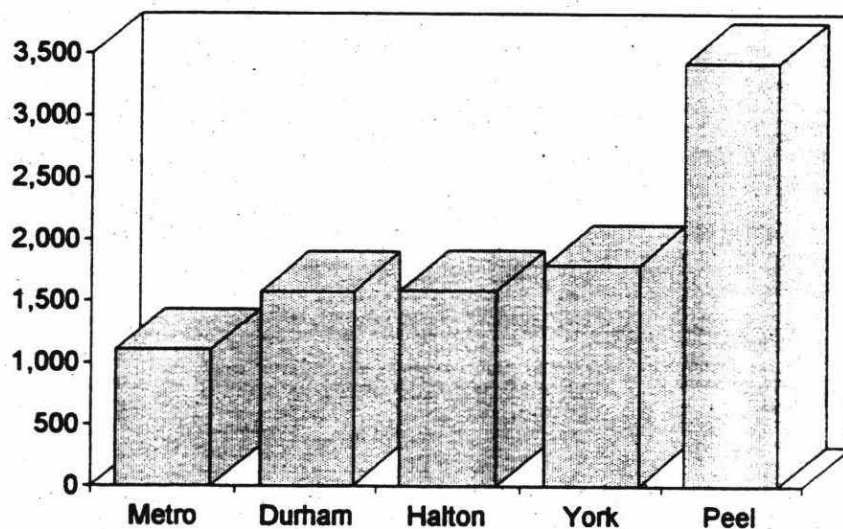
Source: MARS, 1992, Ministry of Municipal Affairs

Reserves and Reserve Funds

Reserves and reserve funds are used for both capital and current operational purposes. In 1992, reserves and reserve funds totalled \$2.5 billion in the GTA. This represented an average of about \$1,100 per household. Reserves totalled \$968 million in Metro, \$812 million in Peel, \$290 million in York, \$222 million in Durham and \$177 million in Halton. Specifically, reserves in each of the Regions approached \$3,428 per household in Peel, \$1,796 per household in York, \$1,589 in Halton, \$1,576 in Durham and \$1,107 in Metro.

Figure 4-5

Reserves Per Household



Source: MARS, 1992, Ministry of Municipal Affairs

4.3 DURHAM REGION

Table 4-3 summarizes the financial profile for Durham Region and its constituent area municipalities. A complete financial profile is presented in Schedule A.

4.3.1 Property Assessment, Tax and Other Revenue

On average, residential assessment in Durham Region in 1992 approached 85 percent of the total tax base, with the commercial/industrial sector representing the remaining 15 percent. However, the residential/commercial split ranged quite considerably. The Cities of Oshawa and Whitby maintained a commercial/industrial sector that ranged between 21 and 24 percent of the tax base. In the smaller municipalities, however, the commercial/ industrial sectors ranged between 6 and 12 percent of the tax base.

On average, residential property taxes in Durham Region approached \$3,115 per household in 1992. This consisted of \$676.00 for local purposes; \$548.00 per household for the Regional levy; \$328.00 in direct charges and, \$1,562.00 for school purposes. In 1992, the school portion of property taxes approached 50 percent, with the Regional levy approaching 18 percent and the local levy being 22 percent. While property taxes for Regional and local purposes totalled \$220 million in 1992, 68 percent (\$150 million) was derived from the residential sector with 32 percent (\$69 million) paid by the commercial/industrial sector (Schedule A, Durham).

In total in 1992, property taxes represented 38 percent of all of the municipalities' revenue sources. Provincial and Federal grants totalled \$170 million in 1992 and this represented 30.0 percent of total revenue. Similarly, program revenue totalled \$111 million in 1992 representing 19 percent.

4.3.2 Operating Expenditures

In total, operating expenditures in the Durham area approached \$571 million in 1992. The Region itself accounted for \$355 million, or 62 percent of total. Expenditures related primarily to Social Services -- 166.8 million; Waterworks and Sanitary Sewage -- \$91.7 million; and, Police - \$94.0 million (Schedule A, Durham). Local expenditures, on the other hand, related primarily to Road Maintenance and Repair - \$86.7 million; Recreation - \$53.2 million; and, Fire Protection - \$38.8 million and Planning- \$13.2 million (Schedule A, Durham).

Waste Management costs in Durham Region (Region and area municipalities) totalled \$21.3 million in 1992. This includes approximately \$5.7 million for 3Rs programs which represented 1.0 percent of the total Region's 1992 operating expenditures of \$571.3 million.

When expressed on a per household basis total Regional expenditures approached \$4,057.00 per household with Regional expenditures representing approximately 62% of the total and local expenditures representing the remaining 38%.

4.3.3 Capital Expenditures and Reserves

In 1992, capital expenditures for the Durham area (Region and area municipalities) approached \$106 million and this consisted mainly of Road Maintenance and Repair - \$47.3 million; Water and sewer - \$62.2 million; Recreation - \$11.0 million; General Government - \$2.6 million, Police and Fire Protection - \$5.5 million and other capital costs -- \$20.0 million (Schedule A, Durham). These capital expenditures were funded from: reserves and reserve funds - 20 percent; general tax revenue 32 percent; Provincial Grants - 15 percent; debenture borrowing 30 percent and other revenue 3 percent (Schedule A, Durham).

Total outstanding debt in Durham in 1992 approached \$71.9 million, of which \$11.8 was held by the Region itself. This represented an average of \$511.00 per household when both the Region and area municipalities are combined. To finance this debt, debt charges in Durham totalled \$13.2 million and this represented about \$94.00 per household. When expressed as a percentage of expenditures, which is the Ministry of Municipal Affairs debt capacity guideline, debt charges for the entire Regional area in 1992 represented 2.3 percent.

In 1992, reserve funds totalled \$222 million for both the Region and the area municipalities. The Region itself maintained \$113.5 million in reserves and reserve funds while the area municipalities maintained \$108.5 million. When combined, these funds represented a 39 percent coverage of annual operating expenditures and, in total, these funds approach \$1,576.00 per household.

DURHAM REGION FINANCIAL PROFILE

TABLE 4.3

	RMD	Oshawa	Ajax	Clarington	Pickering	Whitby	Brock	Scugog	Uxbridge	Total	% of Total
HOUSEHOLDS (1992)*	140,832	48,570	18,711	16,947	21,225	20,258	4,056	6,171	4,894	140,832	
EQUALIZED TAXABLE ASSESSMENT											
Residential Portion %		79%	91%	94%	91%	76%	89%	89%	88%	85%	
Commercial/Other Portion %		21%	9%	6%	9%	24%	11%	11%	12%	15%	
AVERAGE TAX PER HOUSEHOLD											
Local		898	680	489	495	571	606	504	596	676	22%
Regional		583	499	445	588	570	501	490	605	548	18%
Schools		1,694	1,379	1,426	1,662	1,460	1,254	1,502	1,750	1,562	50%
Other Direct Charges		305	352	366	352	296	344	345	340	328	11%
Total		3,479	2,910	2,725	3,096	2,897	2,705	2,841	3,291	3,115	100%
LOCAL REVENUE (000's)											
Property Taxation (Local)***	96,476	49,612	16,906	12,591	15,030	18,439	2,975	3,900	3,582	219,512	38%
Con/Unconditional Grants	145,370	10,270	2,276	2,537	3,660	3,159	1,038	1,277	987	170,573	30%
Payments in Lieu of Taxes	0	2,216	327	1,677	5,658	1,576	106	120	173	11,852	2%
Fees & Service Charges	32,275	10,092	2,759	3,415	5,335	3,486	411	559	692	59,025	10%
Program Revenues	81,043	13,107	3,084	1,825	4,796	5,464	569	566	1,093	111,548	19%
Total	355,164	85,297	25,353	22,044	34,480	32,124	5,099	6,422	6,527	572,510	100%
OPERATING EXPENDITURES (000's)											
Per Household	2,519	1,757	1,374	1,309	1,616	1,576	1,207	999	1,252	4,057	
Solid Waste	10,528	1,821	468	1,442	228	616	76	271	127	21,335	
% of Total Expend.	3%	2%	2%	7%	1%	2%	2%	4%	2%	4%	
3Rs	2,596	855	506	285	619	721	53	53	70	5,758	
% of Total Expend.	1%	1%	2%	1%	2%	2%	1%	1%	1%	1%	
CAPITAL FUND REVENUES (000's)											
Per Household	679	475	613	302	515	506	426	234	612	1,155	
CAPITAL FUND EXPEND'S (000's)											
Per Household	403	362	266	300	252	507	454	228	553	753	
L.T. DEBT OUTSTANDING (000's)											
Per Household	84	372	837	353	354	583	191	36	7	511	
DEBT CHARGES (000's)											
Per Household	34	124	27	50	11	31	30	6	6	94	
% of Expend.**	1%	7%	2%	4%	1%	2%	2%	1%	0%	2%	
RESERVES/RESERVE FUNDS (000's)											
Per Household	806	683	849	1,326	691	833	455	334	311	1,576	

Source: Ministry of Municipal Affairs - MARS FIR'S 1992

* Source: Hardy Stevenson and Associates, "GTA 3Rs Analysis, Social Impact Technical Appendix", 1994b

**Simple Ratio: MMA (old OMB) guideline is more detailed

***Differences in over/under levies have been added to Regional levy

4.4 METROPOLITAN TORONTO

4.4.1 Property Assessment, Tax and Other Revenue

On average, residential assessment in Metropolitan Toronto in 1992 approached 55 percent of the total tax base, with the commercial/industrial sector representing the remaining 45 percent. This residential/commercial split is relatively consistent throughout Metro except for the smaller municipalities. The City of Toronto maintained the highest commercial ratio in 1992 at 56.0 percent, while Etobicoke, Scarborough, and North York ranged between commercial ratios of 36 to 44 percent. At the same time, York and East York, however, maintained a commercial/industrial sector that represented between 24 and 26 percent of the tax base.

On average, residential property taxes in Metropolitan Toronto Region approached \$2,771 per household in 1992. This consisted of \$479.00 for local purposes; \$677.00 per household for the Regional levy; \$199.00 for direct charges, and, \$1,416 for school purposes. In 1992, the school portion of property taxes approached 51 percent, with the Regional levy approaching 24 percent with the local levy being 17 percent. While property taxes for Regional and local purposes totalled \$2.1 billion in 1992, 51 percent (\$1.086 billion) was derived from the residential sector with 49 percent (\$1.062 billion) paid by the commercial/industrial sector (Schedule A, Metro).

In total in 1992, property taxes represented 41 percent of all of the municipalities' revenue sources. Provincial and Federal grants totalled \$1.6 billion in 1992 and this represented approximately 30 percent of total revenue. Similarly, program revenue (user charges, water revenues, recreation fees, etc.) totalled \$896.6 million in 1992 and this represented 17 percent of all revenue.

4.4.2 Operating Expenditures

Operating expenditures in Metropolitan Toronto Region approached \$5.3 billion in 1992. Metro itself accounted for \$3.7 billion, with the area municipalities totalling \$1.6 billion. Metro expenditures related primarily to: Social Services -- \$1.5 billion; Transportation -- \$853.3 million; Police -- \$586.6 million; and, Waterworks and Sanitary Sewage -- \$236.5 million (Schedule A, Metro). Local expenditures, related primarily to: Recreation - \$361.1 million; General Government -- \$333.9 million; Fire Protection - \$289.9 million; Road Maintenance and Repair - \$51.6 million; and Planning - \$61.1 million (Schedule A, Metro). When expressed on a per household basis Metro's expenditures approach \$6,038 per household.

Total Waste Management costs in the Metropolitan Toronto Region (Region and area municipalities) totalled \$187.8 million in 1992. When the 1992 costs of \$47.0 million for 3Rs are compared, it can be shown that waste diversion represented 0.9 percent of the total area's 1992 operating expenditures of \$5.3 billion.

4.4.3 Capital Expenditures and Reserves

In 1992, capital expenditures for the Metro Region approached \$753 million and this consisted mainly of Transportation and Road Maintenance - \$306.4 million; Water and sewer - \$130.4 million; General Government - \$86.6 million; Recreation - \$95.9 million; Solid Waste Management - \$17.4 million and, other capital spending -- \$116.3 million (Schedule A, Metro). These capital expenditures were funded from: general tax revenue 20 percent; reserves and reserve funds - 18 percent; Provincial Grants - 26 percent; debenture borrowing - 22 percent and other capital financing - 14 percent (Schedule A, Metro).

Total outstanding debt in the Metro area in 1992 exceeded \$1.0 billion, of which \$512.6 was held by Metro itself. This represented an average of \$1,200.00 per household when both the Metro and area municipalities are combined. To finance this debt, debt charges in the Metropolitan Toronto area total \$230.0 million which represents about \$263.00 per household. When expressed as a percentage of expenditures, which is the Ministry of Municipal Affairs debt capacity guideline, debt charges for the entire Regional area in 1992 represented 4.4 percent.

In 1992, reserve funds totalled 968.4 million for Metro. Metro itself maintained \$332.0 million in reserves and reserve funds while the area municipalities maintained \$636.4 million. Combined, these funds represent an 18 percent coverage of annual operating expenditures and, in total, these funds approach \$1,107.00 per household.

METROPOLITAN TORONTO FINANCIAL PROFILE

TABLE 4.4

	Metro	Toronto	Etobicoke	Scarborough	North York	York	East York	Total	% of Total
HOUSEHOLDS (1992)*	875,021	273,936	116,625	177,033	205,604	56,809	45,014	875,021	
EQUALIZED TAXABLE ASSESSMENT									
Residential Portion %		44%	56%	64%	61%	76%	74%	55%	
Commercial/Other Portion %		56%	44%	36%	39%	24%	26%	45%	
AVERAGE TAX PER HOUSEHOLD									
Local		516	435	456	460	526	476	479	17%
Regional		723	722	603	739	481	535	677	24%
Schools		1,472	1,526	1,291	1,551	1,033	1,147	1,416	51%
Other Direct Charges		172	221	199	213	222	215	199	7%
Total		2,882	2,905	2,549	2,963	2,263	2,372	2,771	100%
LOCAL REVENUE (000's)***									
Property Taxation (Local)	1,297,265	369,409	99,180	138,196	171,317	41,730	31,323	2,148,420	41%
Con/Unconditional Grants	1,429,826	56,012	16,452	28,296	28,218	11,304	8,086	1,578,194	30%
Payments in Lieu of Taxes	0	92,326	14,829	18,897	22,752	1,726	1,601	152,131	3%
Fees & Service Charges	239,305	80,107	21,468	27,325	41,822	6,907	4,294	421,228	8%
Program Revenues	641,967	110,915	33,798	28,398	61,788	10,852	8,846	896,564	17%
Total	3,608,363	708,769	185,727	241,112	325,897	72,519	54,150	5,196,537	100%
OPERATING EXPEND'S (000's)	3,690,980	713,254	187,637	240,729	322,530	73,736	54,303	5,283,169	
Per Household	4,218	2,604	1,609	1,360	1,569	1,298	1,206	6,038	
Solid Waste	80,282	26,118	9,489	-3,287	18,336	4,420	3,125	187,864	
% of Total Expend.	2%	4%	5%	-1%	6%	6%	6%	4%	
3Rs	18,503	8,475	2,650	3,287	3,662	55	446	37,078	
% of Total Expend.	1%	1%	1%	1%	1%	0.1%	1%	1%	
CAPITAL FUND REV'S (000's)	414,887	150,304	19,798	37,844	73,375	5,081	4,844	706,133	
Per Household	474	549	170	214	357	89	108	807	
CAPITAL EXPEND'S (000's)	465,793	150,703	24,248	34,328	63,103	9,463	5,285	752,923	
Per Household	532	550	208	194	307	167	117	860	
LT DEBT OUTSTANDING (000's)	512,694	406,385	56,093	7,824	29,760	19,567	18,063	1,050,386	
Per Household	586	1,484	481	44	145	344	401	1,200	
DEBT CHARGES (000's)	141,215	43,016	12,116	4,540	9,774	13,801	5,538	230,000	
Per Household	161	157	104	26	48	243	123	263	
% of Expend.**	4%	6%	6%	2%	3%	19%	10%	4%	
RESERVES (000's)	332,040	314,993	47,521	124,270	126,096	11,464	12,078	968,462	
Per Household	379	1,150	407	702	613	202	268	1,107	

Source: Ministry of Municipal Affairs - MARS FIR'S 1992

* Source: Hardy Stevenson and Associates, "GTA 3Rs Analysis, Social Impact Technical Appendix", 1994b

**Simple Ratio: MMA (old OMB) guideline is more detailed

***Differences in over/under levies have been added to Regional levy

4.5 YORK REGION

4.5.1 Property Assessment, Tax and Other Revenue

On average, residential assessment in York Region in 1992 approached 73 percent of the total tax base, with the commercial/industrial sector representing the remaining 27 percent. This residential/commercial split, however, ranged considerably. On the one hand, the City of Vaughan maintained a commercial/industrial sector that represented 38 percent of the tax base. Newmarket and Richmond Hill maintained commercial/ industrial ratios between 22 and 24 percent. In the smaller municipalities, however, the commercial/industrial sectors ranged between 8 and 17 percent of the tax base.

On average, residential property taxes in York Region approached \$3,295 per household in 1992. This consisted of \$582.00 for local purposes; \$368.00 for the Regional levy; \$273.00 in direct charges and, \$2,072 for school purposes. In 1992, the school portion of property taxes approached 63 percent, with the Regional levy approaching 11 percent with the local levy being 18 percent. While property taxes for Regional and local purposes totalled \$253 million in 1992, 69 percent (\$174.6 million) was derived from the residential sector with 31 percent (\$77.9 million) paid by the commercial/industrial sector (Schedule A, York).

In total in 1992, property taxes represented 46 percent of all of the municipalities revenue sources. Provincial and Federal grants totalled \$143.2 million in 1992 and this represented 26 percent of total revenue. Similarly, program revenue (user charges, water revenues, recreation fees, etc.) totalled \$87.3 million in 1992 and this represented 16 percent of all revenue.

4.5.2 Operating Expenditures

Operating expenditures in York Region approached \$593 million in 1992. The Region itself accounted for \$285 million, with the area municipalities totalling \$308 million. Regional expenditures related primarily to Social Services -- \$118.7 million; Police -- \$59.3 million; and, Waterworks and Sanitary Sewage -- \$74.6 million (Schedule A, York). Local expenditures, on the other hand, related primarily to Recreation - \$71.3 million; Road Maintenance and Repair - \$60.3 million; Fire Protection - \$44.2 million and Planning -\$12.5 million (Schedule A, York). When expressed on a per household basis Regional expenditures approach \$3,667.00.

Total Waste Management costs in York Region (Region and area municipalities) totalled \$41.6 million in 1992. When the 1992 costs of \$4.9 million for 3Rs are compared, it can be shown that 3Rs programs represented less than 1 percent of the total Region's 1992 total operating expenditures of \$592.8 million.

4.5.3 Capital Expenditures and Reserves

In 1992, capital expenditures for York Region approached \$139.4 million and this consisted mainly of Road Maintenance and Repair - \$53.3 million; Recreation - \$32.0 million; General Government - \$29.9 million; Water and Sewer - \$17.0 million and capital costs for other purposes -- \$7.2 million (Schedule A, York). These capital expenditures were funded from: reserves and reserve funds - 40 percent; debenture borrowing - 30 percent; Provincial Grants - 14 percent; general tax revenue 10 percent and other capital financing -6 percent (Schedule A, York).

Total outstanding debt in the York area in 1992 approached \$13.4 million, of which \$39.9 was held by the Region. This represented an average of \$826.00 per household when both the Region and area municipalities are combined. To finance this debt, debt charges in York totalled \$15.2 million per year which represented about \$94.00 per household. When expressed as a percentage of expenditures, which is the Ministry of Municipal Affairs debt capacity guideline, debt charges for the entire Region area in 1992 represented 2.6 percent.

In 1992, reserve funds totalled 290.2 million for the Region and the area municipalities. The Region itself maintained \$107.4 million in reserves and reserve funds while the area municipalities maintained \$182.8 million. When combined, these funds represented a 50 percent coverage of annual operating expenditures and, in total, these funds approach \$1,796.00 per household.

YORK REGION FINANCIAL PROFILE

TABLE 4.5

	RMY	Aurora	Markham	Newmarket	Richmond Hill	Vaughan	W/S	E/C	Georgina	King	Total	% of Total
HOUSEHOLDS (1992)*	161,654	10,074	46,912	15,233	27,456	32,083	6,501	5,986	11,235	6,174	161,654	
EQUALIZED TAXABLE ASSESS'T												
Residential Portion %		90%	69%	76%	78%	62%	83%	92%	89%	92%	73%	73%
Commercial/Other Portion %		10%	31%	24%	22%	38%	17%	8%	11%	8%	27%	27%
AVERAGE TAX / HOUSEHOLD												
Local		217	498	472	826	656	604	600	607	532	582	18%
Regional		108	404	300	378	462	379	300	249	432	368	11%
Schools		584	2,272	1,673	2,144	2,572	2,068	1,735	1,443	2,522	2,072	63%
Other Direct Charges		326	293	276	313	332	50	137	178	79	273	8%
Total		1,235	3,466	2,721	3,661	4,021	3,100	2,771	2,477	3,565	3,295	100%
LOCAL REVENUE (000's)***												
Property Taxation (Local)	96,271	8,836	43,819	9,922	30,716	40,928	4,868	3,918	8,605	4,707	252,590	46%
Con/Unconditional Grants	112,597	1,355	9,924	2,549	4,163	6,853	1,043	1,171	2,430	1,126	143,211	26%
Payments in Lieu of Taxes	0	268	929	359	254	899	117	67	88	97	3,078	1%
Fees & Service Charges	10,903	1,837	11,526	4,855	13,448	12,294	1,326	758	2,074	1,512	60,533	11%
Program Revenues	21,151	3,348	22,068	4,804	10,017	20,364	1,395	1,042	1,751	1,375	87,315	16%
Total	240,922	15,644	88,266	22,489	58,598	81,338	8,749	6,956	14,948	8,817	546,727	100%
OPERATING EXPEND'S (000's)	284,617	16,126	91,247	24,946	55,925	81,383	8,557	6,899	15,019	8,134	592,853	
Per Household	1,761	1,601	1,945	1,638	2,037	2,537	1,316	1,153	1,337	1,317	3,667	
Solid Waste	0	953	17,114	3,244	5,233	7,823	624	668	1,104	796	41,651	
% of total	0%	6%	19%	13%	9%	10%	7%	10%	7%	10%	7%	
3Rs	896	209	777	371	631	1,415	137	127	151	274	4,988	
% of total	0.3%	1%	1%	1%	1%	2%	2%	2%	1%	3%	1%	
CAPITAL REV'S (000's)	88,447	4,491	17,997	2,071	20,057	20,396	871	1,639	4,178	1,151	161,298	
Per Household	547	446	384	136	731	636	134	274	372	186	998	
CAPITAL EXPEND'S (000's)	71,551	2,929	9,931	2,075	28,873	14,671	1,022	1,081	5,681	1,578	139,392	
Per Household	443	291	212	136	1,052	457	157	181	506	256	862	
LT DEBT OUTSTANDING (000's)	39,906	2,253	25,332	1,630	22,606	30,369	951	3,079	6,769	563	133,458	
Per Household	247	224	540	107	823	947	146	514	602	91	826	
DEBT CHARGES (000's)	5,526	16	1,328	614	1,608	4,124	346	477	1,173	32	15,244	
Per Household	34	2	28	40	59	129	53	80	104	5	94	
% of Expend.**	2%	1%	1%	2%	3%	5%	4%	7%	8%	4%	3%	
RESERVE FUNDS (000's)	107,453	15,537	44,453	7,381	54,395	39,318	7,146	2,036	6,978	5,574	290,271	
Per Household	665	1,542	948	485	1,981	1,226	1,099	340	621	903	1,796	

Source: Ministry of Municipal Affairs - MARS FIR'S 1992

* Source: Hardy Stevenson and Associates, "GTA 3Rs Analysis, Social Impact Technical Appendix", 1994b

**Simple Ratio: MMA (old OMB) guideline is more detailed

***Differences in over/under levies have been added to Regional levy

4.6 PEEL REGION

Table 4-6 summarizes the financial profile for Peel Region and its constituent area municipalities. A complete financial profile is presented in Schedule A.

4.6.1 Property Assessment, Tax and Other Revenue

On average, residential assessment in Peel Region in 1992 approached 82 percent of the total tax base, with the commercial/industrial sector representing the remaining 18 percent. This residential/commercial split was relatively similar throughout Peel Region. The City of Mississauga maintained a commercial/industrial sector that represented 18 percent of the tax base, while Brampton's ratio approached 17 percent. Caledon's ratio approached 14 percent.

On average, residential property taxes in Peel Region approached \$3,077 per household in 1992. This consisted of \$546.00 for local purposes; \$478.00 per household for the Regional levy; \$314.00 for direct charges and, \$1,740 for school purposes. In 1992, the school portion of property taxes approached 57 percent, with the Regional levy approaching 16 percent and the local levy being 18 percent. While property taxes for Regional and local purposes totalled \$393 million in 1992, 62 percent (\$243.2 million) was derived from the residential sector with 38 percent (\$149.4 million) paid by the commercial/industrial sector (Schedule A, Peel).

In total in 1992, property taxes represented 45 percent of all of the municipalities revenue sources. Provincial and Federal grants totalled \$222.5 million in 1992 and this represented 25 percent of total revenue. Similarly, program revenue (user charges, water revenues, recreation fees, etc.) totalled \$181.4 million in 1992 and this represented 21 percent.

4.6.2 Operating Expenditures

Operating expenditures in Peel Region approached \$883 million in 1992. The Region itself accounted for \$476 million, with Mississauga totalling \$269 million, Brampton \$120 million and Caledon \$17 million. Regional expenditures related primarily to: Social Services - \$193 million; Waterworks and Sanitary Sewage - \$117 million; and, Police - \$114 million (Schedule A, Peel). Local expenditures related primarily related to: Road Maintenance and Repair - \$128 million; Recreation - \$82.3 million; Fire Protection - \$68.0 million and Planning - \$13.3 million (Schedule A, Peel). When expressed on a per household basis total Regional expenditures approach \$3,730.00.

Waste Management costs in Peel Region (Region and area municipalities) totalled \$32.4 million in 1992. When the 1992 costs of \$7.5 million for 3Rs are compared, it can be shown that they represent less than 1.0 percent of the Regions 1992 total operating expenditures of \$883 million.

4.6.3 Capital Expenditures and Reserves

In 1992, capital expenditures for Peel Region approached \$189.4 million and this consisted mainly of Road Maintenance and Repair - \$66.7 million; Recreation - \$36.7 million; Water and sewer - \$47.1 million; General Government - \$14.9 million, Solid Waste - \$6.0 million and other capital costs -- \$18.0 million (Schedule A, Peel). These capital expenditures were funded from: reserves and reserve funds - 50 percent; Debentures - 26.0 percent; Provincial Grants - 10 percent; general tax revenue 11 percent and other financing 3 percent (Schedule A, Peel).

Total outstanding debt in the Peel in 1992 approached \$146.4 million, of which \$52.5 was held by the Region. This represented an average of \$618.00 per household. To finance this debt, debt charges in Peel area totalled \$37.9 million and this represented about \$160.00 per household. When expressed as a percentage of expenditures, which is the Ministry of Municipal Affairs debt capacity guideline, debt charges for the entire Region in 1992 represented 4.3 percent.

In 1992, reserve funds totalled 811.7 million for the total Region. The Region itself maintained \$376.1 million in reserves and reserve funds while the area municipalities maintained \$435.6 million. When combined, these funds represented a 92 percent coverage of annual operating expenditures and, in total, these funds approach \$3,428.00 per household.

PEEL REGION FINANCIAL PROFILE

TABLE 4.6

	RMP	Brampton	Mississauga	Caledon	Total	% of Total
HOUSEHOLDS (1992)*	236,775	72,943	152,759	11,073	236,775	
EQUALIZED TAXABLE ASSESSMENT						
Residential Portion %		83%	82%	86%	82%	
Commercial/Other Portion %		17%	18%	14%	18%	
AVERAGE TAX						
Local		559	523	776	546	18%
Regional		396	519	455	478	16%
Schools		1,547	1,792	2,300	1,740	57%
Other Direct Charges		316	312	330	314	10%
Total		2,817	3,145	3,860	3,077	100%
LOCAL REVENUE (000's)***						
Property Taxation (Local)	180,963	69,585	131,138	11,025	392,711	45%
Con/Unconditional Grants	179,799	11,796	29,122	2,808	223,525	25%
Payments in Lieu of Taxes	0	1,528	19,362	109	20,999	2%
Fees & Service Charges	10,027	16,766	33,652	1,593	62,038	7%
Program Revenues	108,008	21,533	49,724	2,213	181,478	21%
Total	478,797	121,208	262,998	17,748	880,751	100%
OPERATING EXPENDITURES (000's)	475,863	120,463	269,491	17,456	883,273	
Per Household	2,010	1,651	1,764	1,576	3,730	
Solid Waste	11,647	3,789	8,564	932	32,392	
% of Total Expend.	2%	3%	3%	5%	4%	
3Rs	1,840	1,182	4,170	268	7,460	
% of Total Expend.	0.4%	1%	2%	2%	1%	
CAPITAL FUND REVENUES (000's)	141,952	40,840	66,201	2,311	251,304	
Per Household	600	560	433	209	1,061	
CAPITAL FUND EXPENDITURES (000's)	91,709	24,217	70,938	2,592	189,456	
Per Household	387	332	464	234	800	
LONG TERM DEBT OUTSTANDING (000's)	52,452	89,300	3,291	1,365	146,408	
Per Household	222	1,224	22	123	618	
DEBT CHARGES (000's)	22,249	13,359	1,682	571	37,861	
Per Household	94	183	11	52	160	
% of Expend.**	5%	11%	1%	3%	4%	
RESERVES/RESERVE FUNDS (000's)	376,167	52,946	375,438	7,189	811,740	
Per Household	1,589	726	2,458	649	3,428	

Source: Ministry of Municipal Affairs - MARS FIR'S 1992

* Source: Hardy Stevenson and Associates, "GTA 3Rs Analysis, Social Impact Technical Appendix", 1994b

**Simple Ratio: MMA (old OMB) guideline is more detailed

***Differences in over/under levies have been added to Regional levy

4.7 HALTON REGION

4.7.1 Property Assessment, Tax and Other Revenue

On average, residential assessment in Halton Region in 1992 approached 74 percent of the total tax base, with the commercial/industrial sector representing the remaining 26 percent. This residential/commercial split was relatively similar throughout Halton Region. The Town of Milton maintained the largest commercial/industrial sector, at approximately 31 percent, followed closely by Burlington and Oakville at 26 percent of the tax base.

On average, residential property taxes in Halton Region approached \$2,863 per household in 1992. This consisted of \$604.00 for local purposes; \$408.00 per household for the Regional levy; \$278.00 in direct charges and, \$1,573 for school purposes. In 1992, the school portion of property taxes approached 55 percent, with the Regional levy approaching 14 percent, the local levy being 21 percent and direct charges approached 10 percent. While property taxes for Regional and local purposes totalled \$170.7 million in 1992, 69 percent (\$117.2 million) was derived from the residential sector with 31 percent (\$53.5 million) paid by the commercial/industrial sector (Schedule A, Halton).

In total in 1992, property taxes represented 47 percent of all of the municipalities revenue sources. Provincial and Federal grants totalled \$87.3 million in 1992 which represented 24 percent of total revenue. Similarly, program revenue (user charges, water revenues, recreation fees, etc.) totalled \$76.0 million in 1992 which represented 21 percent. On average, non-tax revenues approached \$29.7 million or 8.2 percent of total revenue in 1992.

4.7.2 Operating Expenditures

Operating expenditures in Halton Region approached \$364.8 million in 1992. The Region itself accounted for \$200 million, with Burlington and Oakville exceeding \$165 million. Regional expenditures related primarily to: Waterworks and Sanitary Sewage -- \$47.1 million; Social Services - \$65.4 million; and, Police - \$35.7 million (Schedule A, Halton). Local expenditures related primarily to: Road Maintenance and Repair - \$51.0 million; Recreation - \$44.4 million; Fire Protection - \$27.4 million and Planning - \$6.6 million (Schedule A, Halton).

Total Waste Management costs in Halton Region (Region and area municipalities) totalled \$26.9 million in 1992. When the 1992 costs of \$5.4 million for 3Rs are compared, it can be shown that they represented 1.5 percent of the total Region's 1992 operating expenditures.

Regional expenditures expressed on a per household basis approach \$3,269.00 with local expenditures representing 45 percent and Regional expenditures representing 55 percent.

4.7.3 Capital Expenditures and Reserves

In 1992, capital expenditures for Halton Region approached \$115.7 million and this consisted primarily of Road Maintenance and Repair - \$48.3 million; Water and sewer - \$15.8 million; Recreation - \$7.8 million; General Government - \$3.1 million, Solid Waste - \$14.2 million and other capital costs -- \$26.5 million (Schedule A, Halton). Capital expenditures were funded from: reserves and reserve funds - 31 percent; Provincial Grants - 22 percent; general tax revenue 13 percent; debenture borrowing - 32 percent and other revenue 2% (Schedule A, Halton).

Total outstanding debt in Halton in 1992 approached \$150 million, of which \$100 million was held by the Region. This represented an average of \$1,346.00 per household when both the Region and area municipalities were combined. To pay this debt, debt charges in Halton totalled \$26.4 million per year and this represented about \$237.00 per household. When expressed as a percentage of expenditures, which is the Ministry of Municipal Affairs debt capacity guideline, debt charges for the entire Regional area in 1992 represented 7.3 percent. (A ratio approaching 20 percent is considered high.)

In 1992, reserve funds totalled \$177.3 million for the Region. The Region itself maintained \$89.2 million in reserves and reserve funds while the area municipalities maintained \$88.1 million. When combined, these funds represented a 49 percent coverage of annual operating expenditures and, in total, these funds approach \$1,589.00 per household.

HALTON REGION FINANCIAL PROFILE

TABLE 4.7

	RMH	Burlington	Halton Hills	Milton	Oakville	Total	% of Total
HOUSEHOLDS (1992)*	111,586	48,485	12,792	10,559	39,750	111,586	
EQUALIZED TAXABLE ASSESSMENT							
Residential Portion %		74%	80%	69%	74%	74%	
Commercial/Other Portion %		26%	20%	31%	26%	26%	
AVERAGE TAX PER HOUSEHOLD							
Local		562	529	430	727	604	21%
Regional		330	357	390	523	408	14%
Schools		1,422	1,493	1,651	1,762	1,573	55%
Other Direct Charges		276	299	259	278	278	10%
Total		2,590	2,678	2,729	3,290	2,863	100%
LOCAL REVENUE							
Property Taxation (Local)***	72,170	40,828	9,465	7,819	40,464	170,746	47%
Con/Unconditional Grants	68,095	7,979	2,397	2,167	6,722	87,360	24%
Payments in Lieu of Taxes	0	2,956	445	680	1,935	6,016	2%
Fees & Service Charges	6,787	5,622	2,026	1,460	7,788	23,683	7%
Program Revenues	52,224	10,113	2,278	1,679	9,804	76,098	21%
Total	199,276	67,498	16,611	13,805	66,713	363,903	100%
OPERATING EXPENDITURES							
Per Household	1,791	1,399	1,299	1,306	1,677	3,269	
Solid Waste	20,262	555	364	231	589	26,940	
% of Total Expend.	10%	1%	2%	2%	1%	7%	
3Rs	1,614	1,576	324	289	1,598	5,401	
% of Total Expend.	1%	2%	2%	2%	2%	1%	
CAPITAL FUND REVENUES							
Per Household	725	320	406	495	884	1,272	
CAPITAL FUND EXPENDITURES							
Per Household	560	339	335	553	671	1,037	
LONG-TERM DEBT OUTSTANDING							
Per Household	892	596	431	376	308	1,346	
DEBT CHARGES							
Per Household	164	94	51	55	60	237	
% of Expend.**	9%	7%	4%	4%	4%	7%	
RESERVES/RESERVE FUNDS							
Per Household	800	960	830	507	644	1,589	

N/A=Not Applicable

Source: Ministry of Municipal Affairs - MARS FIR'S 1992

* Source: Hardy Stevenson and Associates, "GTA 3Rs Analysis, Social Impact Technical Appendix", 1994b

**Simple Ratio: MMA (old OMB) guideline is more detailed

4.8 FUTURE CAPITAL EXPENDITURES

The future capital costs and obligations of each Region in the GTA have been analyzed, along with the proposed financing structure to enable a comparison of future total capital costs among the GTA Regions. More specifically, the future total costs have been analyzed relative to future capital costs for 3Rs. The total capital obligations/projections were derived from the capital budgets and forecasts that Future Urban Research received from each of the area municipalities within the GTA and are representative of the years 1993 to 1997. On the other hand, the capital commitments for 3Rs represent the most recent available capital forecasts and are for the periods 1993 to 1997 and/or 1994 to 1998.

Table 4.2 presents a summary of the 1993/94 to 1997/98 total capital relative to 3Rs capital forecasts for the Region's within the GTA. The GTA municipalities have identified a total of \$11.3 billion in forecast capital projects during the 1993/94 through 1997/98 period. By comparison, the GTA municipalities have identified a total of \$117.2 million (Chapter 3) in capital projects for 3Rs, representing approximately 1.0 percent of the total capital forecast.

Table 4-8

1993/94 - 1997/98 Total Capital Forecast Relative to 3Rs Capital Forecast

	Total Capital (\$000's)	3Rs (\$000's)	%
Durham	814,000	3,188	.4%
Metro	6,711,000	3,688	.1%
York	1,333,000	2,785	.2%
Peel	1,700,000	82,300	4.8%
Halton	743,000	25,252	3.4%
Total GTA	11,301,000	117,213	1.0%

Source: 1993/94 Municipal Capital Budgets and Forecasts

4.8.1 Durham Region

An examination of the Durham Region 1993 Capital Budget and forecast to 1997 as well as an internal report prepared by the Region indicated that an estimated \$814 million has been

allocated/proposed for future capital expenditures. Further, approximately \$467 million, or 57.4% of the total, has been allocated by the Region with the area municipalities allocating the remaining (\$347 million). A review of proposed capital financing indicated that approximately 25% would be financed through tax revenue, 16% through debentures, 19% through reserves, 26% through grants and the remainder (14%) through other sources.

By comparison, Durham Region has indicated that \$3.1 million in capital programs has been committed for the same period for 3Rs, which represents 0.4% of the proposed total capital program.

4.8.2 Metro Toronto

An examination of Metro's 1993 - 1997 Capital Program, and a combination of the 1992 and 1993 capital budgets and forecasts for the six area municipalities indicated that an estimated \$6.7 billion has been allocated/proposed for future capital expenditures. Further, approximately \$4.9 billion, or 74% of the total, has been allocated by the Region with the area municipalities allocating the remainder (\$1.7 billion). Approximately 60% of the proposed expenditures would be for transportation. A review of the proposed capital financing indicated approximately 13% would be financed through tax revenue, 29% through debentures, 14% through reserves, and 42% through grants and 2% from other sources.

By comparison, Metro has indicated that \$3.7 million in capital programs will be committed during the 1994 through 1998 period to 3Rs, which represents 0.1 percent of the proposed total capital program.

4.8.3 York Region

An examination of York Region's 1992 Capital Budget and forecast to 1996, and a combination of the 1992 and 1993 capital budgets and forecasts for the nine area municipalities indicated that an estimated \$1.3 billion has been allocated/proposed for future capital expenditures. Further, approximately \$559 million, or 42% of the total, has been allocated by the Region with the area municipalities allocating the remainder (\$773 million). However, it should be noted that due to the fact that Future Urban Research was unable to obtain the capital forecasts from Markham, Newmarket, Vaughan, Whitchurch/Stouffville, and Georgina the projections for these municipalities were, in the interest of conservatism, kept stable with the latest available year for which we had capital information. According to the Commissioner of Finance for York Region, many of the area municipalities within the Region do not complete capital budgets and forecasts, however this practice is currently under review at the Regional level. A review of the proposed capital financing indicated approximately 20% would be financed through tax revenue, 15% through debentures, 48% through reserves, and 10% through grants and 7% from other sources.

By comparison, York has indicated that \$2.8 million in capital programs has been committed during the same period to 3Rs, which represents 0.2% of the proposed total capital program.

4.8.4 Peel Region

An examination of Peel Region's 1993 Capital Budget and forecast to 1997, and a combination of the 1992 and 1993 capital budgets and forecasts for the three area municipalities indicated that an estimated \$1.7 billion has been allocated/proposed for future capital expenditures. Further, approximately 50% of the total has been allocated by the Region with the area municipalities allocating the remainder. Approximately 70% of the proposed expenditures would be for transportation, 33% for recreation and 21% for waste management. A review of the proposed capital financing indicated approximately 11% would be financed through tax revenue, 19% through debentures, 45% through reserves, and 18% through grants and 7% from other sources.

By comparison, Peel has indicated that \$82.3 million in capital programs will be committed during the 1994 through 1998 period to 3Rs, which represents 4.8 percent of the proposed total capital program.

4.8.5 Halton Region

An examination of Halton Region's 1993 Preliminary Rate Supported Budget and the 1993 Preliminary Tax Supported Budget which included the 1994 to 2002 budget forecast, and the various area municipalities 1992 capital budgets and forecasts indicated that an estimated \$743 million has been allocated/proposed for future capital expenditures. Further, approximately \$359 million, or 48.3% of the total, has been allocated by the Region with the area municipalities allocating the remainder (\$384 million). Further, approximately 67% of the proposed expenditures would be for transportation (38%) and the environment (water and sewer, 29%). A review of the proposed capital financing indicated approximately 14% would be financed through tax revenue, 29% through debentures, 37% through reserves, and 20% through grants.

By comparison, Halton Region has indicated that \$25.2 million in capital programs will be committed during the same period to 3Rs, which represents 3.4% of the proposed total capital program.

5.0 ASSESSMENT AND EVALUATION OF THE 3Rs SYSTEMS

5.1 OVERVIEW AND METHODOLOGY

This section of the report details the assessment and evaluation of the alternative 3Rs systems, undertaken for each Region with respect to the Municipal Finance discipline. To examine the effects of the six diversion system alternatives, and rank the results, the criteria and indicators originally developed in the initial stages of the study were used. These are repeated as follows.

Potential Impact on Local Taxpayers

- Total Increase in Net General Municipal Levy
- Net General Municipal Levy, adjusted for commercial/industrial property assessment, expressed on per household basis

Potential for Impact on the Debt Burden on the Municipality

- Amount of Debenture Debt
- Annual Debt Payments as a Percentage of Expenditures
- Available Debt Capacity
(Former OMB/MMA guideline)

Potential Impact on Municipal Reserve Funds

- Total Amount of Reserve Funds
- Reserves per Household
- Reserves as a Percentage of Operating Expenditures

Potential for Impact on the Level of Municipal Service

- Total Municipal Wages, Salaries, Materials & Contract Expenditures per household
- Current Expenditures by Department per Household

Potential for Impact on the Provincial Treasury

Amount of Provincial Funding

During the course of this study, however, it was found that reliance on this criteria had to be reduced. Due to budget and social contract considerations, the amount of grant funding beyond the current Provincial fiscal year is uncertain. In the extreme, the Province may find it necessary to address the funding assistance of each 3Rs alternative examined in this study on a case-by-case basis. Due to this, evaluations under this criteria became indeterminate. Actual resolution may possibly depend on actual funding negotiations with each Region.

Potential for Impact on Private Sector Industries

Amount of Private Sector Funding

Amount of Private Sector Costs

Amount of Costs Passed on Through Higher Prices

Amount of Private Sector Costs Financed Through Taxes,

Incentives, Economies, etc.

In addition to the criteria, a specific methodology was utilized in the preparation of the effects analysis.

The analysis uses the year 2000 for the evaluation of effects. The start up date for most of the alternative systems is 1996 with a gradual phase in period to the year 2000, at which time the programs and facilities may be mature and stabilized. (The existing/committed system may have implementation of some components prior to 1996 and therefore full system development or maturity may occur prior to the year 2000). It was also assumed that all facilities required to support or manage projected waste volumes in the year 2015 would be in place by the year 2000.

The effects analysis does consider the direct impacts on the private sector related to the IC&I systems. Private sector effects in the Municipal Finance analysis relate solely to residential systems. Since the analysis assumes the continuation of existing municipal funding mechanisms, the private sector is effected through property taxation. That is, a portion of diversion costs are levied in local taxes.

To evaluate the effects, the Municipal Finance analysis has used 1992 as the existing year or starting point upon which the costs of the alternative systems were superimposed. The cost of diversion activities as well as the financial profiles which comprise the existing system data for each Region were presented in chapters 3.0 and 4.0 of this report.

With respect to the analysis of the existing system, RIS determined that maintaining the existing (1992) 3Rs system would result in a significant deterioration of diversion rates. Therefore, RIS developed a capital/facility program that would allow the current level of service to be maintained to service future population increases. Therefore, in this Municipal Finance report the future effects for the existing system were also examined and accounted for. The resulting increase in household taxation takes into account the cost of additional programs and/or facilities to maintain the existing service level.

For each of the alternative systems, RIS provided capital cost estimates that included buildings, equipment and vehicles. This municipal finance analysis used debenture financing to fund facilities and major capital items and operating budgets to fund vehicles and equipment. This approach has the effect of staging the system implementation according to the number of vehicles that can be replaced each year within municipal budgets. This has the largest significance when considering the wet/dry and mixed waste systems. On the one hand, these systems are the most expensive alternatives and therefore lowest ranked in this analysis. Therefore any further effort to hasten the vehicle purchase only serves to reduce an already low ranking. On the other hand, the cost effect of hastening vehicle purchases can be accommodated within the sensitivity analysis presented for each Region.

RIS developed a direct cost system which assumes a "Pay by the Bag" structure for which each garbage bag placed curbside would cost \$1.00. Multi-family units not receiving curbside service are not included in the revenue projections. Revenues for each region assume that each household uses an average of 100 bags per year. Under the direct cost system there are two methods of charging for waste collection. The first method is a tax neutral approach whereby property taxes would be reduced by the amount of the bag charge. The second method is an additional tax option and expects that bag charges are collected in addition to normal tax levels.

In the municipal finance analysis, capital and operating costs of the alternative systems were financed through conventional means. While the effect on reserve funds is identified as a criteria, the use of these funds to finance costs is a municipal decision and was avoided where possible. This allowed most cost effects to fall directly on to taxes as a source of financing. While somewhat unrealistic, it provided for a consistent effects analysis for each Region. This non use of reserve funds, coupled with the study's inability to forecast Provincial funding mitigation, means that the analysis is a worst case tax effect scenario. Tests of other funding sources, however, have been included in the sensitivity analysis.

This analysis is presented in the absence of mitigation. During the course of this study, it was found that this criterion had to be removed from the evaluation (Refer to Section 2.4).

As part of the sensitivity tests for each Region, the analysis at first considered examining any savings that could be realized if waste material were diverted rather than disposed. In fact, in 1992 when the Metro tipping fee was \$152.25 per tonne arguments could be made for potential diversion savings. Now that tipping fees throughout the GTA are below \$100 per tonne and at \$50 for Metro, no potential savings are possible. Tests of this nature have therefore been excluded from the sensitivity analyses for each Region. Notwithstanding this, the municipal finance analysis acknowledges that the IWA sites may charge fees that range between \$30 and \$100 per tonne. Due to this (private funding for capital projects is similarly difficult to forecast) it is suggested that, in the future, the disposal cost per tonne be monitored in each Region. As diversion rates rise, economies of scale in the 3Rs sector may reduce unit costs so that savings from diversion (vs disposal) may be realized.

The criteria themselves are not ranked in terms of order of importance. All criteria maintain an equal weighting because no one criterion is viewed to carry more weight, or be of more

significance than others. By considering the relative magnitude of the effects for each of the criteria and indicators, an overall systems ranking can be completed for Municipal Finance.

The detailed effects analysis follows. The technical analysis itself is presented in Schedule B appended to this report. Throughout this discussion, the alternatives are ranked. Those accorded the highest ranking had the lowest impact and those given the lowest ranking had the highest impact.

5.2 REGION OF DURHAM

Each of the system alternatives for the Region of Durham have been described in the GTA 3Rs EA Input document prepared by M.M. Dillon Limited, Consulting Engineers and Planners and are also presented in schedule G appended to this report. There are, however, specific cost and revenue elements associated with each of the diversion alternatives. From a financial perspective, each system can be summarized as follows:

- a) **Existing System:** This system includes the facilities and programs/services presented in the existing system descriptions, plus any capital costs required as a result of keeping pace with existing service levels.

Based on information provided by RIS, capital costs required to provide the facilities/programs to maintain existing service levels are as follows:

- \$9.3 million for a new MRF or a further expansion to the existing MRF
- \$397,000 to distribute 6,600 backyard composters

- b) **Existing/Committed System:** In total, Durham region is expected to incur \$10.9 million in capital expenditures.

- \$2,788,000 for a MRF improvements
- \$702,000 for MRF and depot modifications
- \$365,900 for the distribution of 4,000 backyard composters
- \$9,600,000 for a new MRF (43,000 tonnes/year)
- \$402,000 for 6,700 backyard composters

- c) **Direct Cost:** This system would charge for the amount of garbage placed curbside. This suggests that Durham Region would have two options for charging for waste collection. Under a tax neutral approach, no additional revenue would be charged for waste and diversion collection purposes from the home owners beyond what is now collected via municipal taxes. That is, added direct cost revenue would be netted from collection costs before household tax rates are determined.

Under an added tax direct cost system, garbage bag charges would be levied in addition to normal property taxes that include waste diversion and disposal collection costs. This extra revenue, while representing an added charge to the homeowner, would then be available to the Region to assist in financing other diversion and waste management activities. In this analysis, it was assumed that these added charges would yield approximately \$16.2 million per year to Durham Region. The cost to a household that receives curbside service approaches \$100.00 per year.

Based on information provided by RIS, capital costs required to provide the

facilities/programs to provide this system are as follows:

- \$11,100,000 for a new MRF (51,600 tonnes/year)
- \$2,788,000 on MRF improvements
- \$702,000 on MRF and depot
- \$5,480,000 for 91,270 backyard composters

d) **Expanded Blue Box:** Includes a cost of \$15.0 million for following:

- \$12,300,000 for a new MRF (68,400 tonnes/year)
- \$702,000 for miscellaneous capital commitments
- \$5,846,000 for 95,270 backyard composters

e) **Wet/Dry:** This system would include significant capital costs, including:

- 2,788,000 for MRF improvements
- \$12,300,000 for a new MRF (60,400 tonnes/year)
- \$15,550,000 for 155,530,000 household carts
- \$23,000,000 for a composting facility (67,000 tonnes/year)
- \$5,846,000 for 95,270 backyard composters
- \$702,000 for MRF and depot modifications

f) **Mixed Waste:** This system would require the following:

- \$69,400,000 for a mixed waste processing and composting plant tonnes/year)
- \$9,600,000 for a new MRF (40,000 tonnes/year)
- \$702,000 for MRF and depot improvements
- \$5,846,000 for 95,200 backyard composters
- \$2,788,000 for MRF improvements

5.2.1 Potential Impact on Local Taxpayers

The following describes the system net effects on the local taxpayers. Table 5.2.1 shows that, when all elements are considered, gross costs in Durham Region may range from the existing level of \$7.2 million per year to \$35.8 million per year for the mixed waste B system. Moreover, while the existing/committed expansion program may present an annual operating cost of \$12.8 million per year, the direct cost/tax neutral system may approach \$16.2 million per year, with a direct cost/added tax system approaching \$32.4 million in annual levy costs.

The household cost of diversion may also be compared to the level of municipal taxation paid in Durham Region. In 1992, diversion activities represented \$28.00 per household, or 1.8% of total municipal taxes of \$1,553.00 per household (excluding school taxes). To estimate the future

effects of an increasing tax base on the diversion alternatives the analysis included household growth estimates for Durham.

Household costs range between \$36.00 and \$144.00 for the various alternatives. With the existing/committed system (\$57.00), the direct cost/tax neutral system (\$70.00) and the expanded blue box system (\$74.00) all representing between 4 and 5% of household taxes. Further, the wet/dry system (\$88.00), direct cost/added tax (\$159.00) and the mixed waste systems (\$135.00 and \$144.00 per household) represent above 6% of current average household taxes. (Table 5.2.2)

Table 5.2.1
Durham Region
Cost of Alternative Diversion Systems
Net Annual Diversion Costs -- General Levy

Residential System	Gross Cost (2000)	
Existing System	\$7,269,337	
Existing/Committed	12,815,307	
Direct Cost/Tax Neutral A	16,264,893	
Direct Cost/Added Tax B	32,464,893	
Expanded Blue Box	17,529,610	
Wet / Dry	21,182,775	
Mixed Waste/Low Quality Compost A	35,503,317	
Mixed Waste/High Quality Compost B	35,853,238	

Source: Future Urban Research

To estimate the effect of each system, a share of taxation guideline was utilized. For example, if taxation specifically related to diversion ranged from 0% to 3% of household taxes it was considered to have a low effect, while a share of 4% to 6% was considered to have a medium effect, and a share above 7% was considered to be high. It should be noted that a percentage

increase in the share of taxes relates directly to an increase in taxes.

Based on this, the mixed waste, wet/dry and direct cost/added tax systems would have a high effect on household taxes and are ranked lowest. The existing/committed, direct cost/tax neutral and expanded blue box systems would have a medium effect and are ranked second highest, while the existing system would have a low effect on household taxes and is ranked highest.

Table 5.2.2
Durham Region
Percent of Diversion Costs to
Household Municipal Taxes

Residential System	Current Total Municipal Taxation Per Household	Cost of Diversion Per Household (2000)	Share of Taxation
Existing System (1992)	1,553.00	\$36.00	2%
Existing/Committed	1,553.00	57.00	4%
Direct Cost/Tax Neutral A	1,553.00	70.00	4%
Direct Cost/Added Tax B	1,553.00	159.00	10%
Expanded Blue Box	1,553.00	74.00	5%
Wet/Dry	1,553.00	88.00	6%
Mixed Waste/Low Quality Compost A	1,553.00	135.00	9%
Mixed Waste/High Quality Compost B	1,553.00	144.00	9%

Source: Future Urban Research

5.2.2 Potential Impact on the Debt Burden of the Municipalities

In this analysis, it is assumed that the full capital cost of future diversion commitments would be annualized at 9% for a 10 year period. The effect of increasing the existing debt position in Durham Region due to each alternative is shown on Table 5.2.3. Since both mixed waste

alternatives have the largest capital program, these systems significantly affect Durham Region's associated debt burden. Conversely, since the existing/committed program, the direct cost and expanded blue box systems have lower capital requirements, Durham Region's debt burden has a lower effect in these alternatives.

Table 5.2.3

**Durham Region
Capital Costs Related to
the Diversion Alternatives**

Residential System	Total Existing Debt (\$000)	Total Diversion Debt (\$000)	Percent Increase
Existing System (1992)	\$71,924	\$9,697	13%
Existing/Committed	71,924	13,858	19%
Direct Cost/Tax Neutral A	71,924	20,436	28%
Direct Cost/Added Tax) B	71,924	20,436	28%
Expanded Blue Box	71,924	21,635	30%
Wet/Dry	71,924	60,186	84%
Mixed Waste/Low Quality Compost A	71,924	88,336	123%
Mixed Waste/High Quality Compost B	71,924	88,336	123%

Source: Future Urban Research

An examination of Durham Region's existing debt charge position, that is, the comparison of debt payments (including principal and interest) to operating expenditures, results in debt charges of 2.3% of costs. The future diversion alternatives have the effect of changing these ratios for all systems. With the future existing, existing/committed, direct cost and the expanded blue box the percentage of debt charges to expenditures may increase to between 2.6 and 2.9%, while the wet/dry ratio may increase to 4.0%. With the mixed waste systems, debt charges may increase to 4.7%. This is presented in Table 5.2.4.

Table 5.2.4

**Durham Region
Effect of Diversion Costs on
Municipal Debt Charges**

Residential System	Existing Debt Charges as a Percent of Expenditures	Future Debt Charges as a Percent of Expenditures
Existing System (1992)	2.3%	2.6%
Existing/Committed	2.3%	2.7%
Direct Cost/Tax Neutral A	2.3%	2.9%
Direct Cost/Added Tax B	2.3%	2.9%
Expanded Blue Box	2.3%	2.9%
Wet/Dry	2.3%	4.0%
Mixed Waste/Low Quality Compost A	2.3%	4.7%
Mixed Waste/High Quality Compost B	2.3%	4.7%

Source: Future Urban Research

Similar to the ratio of debt charges to operating expenditures, debt capacity calculations determine the amount of debt available as permitted by the Ministry of Municipal Affairs (former OMB guideline). When estimating debt capacity, using a 9% interest rate and a 10 year term, the total debt capacity for Durham Region approached \$373 million (Table 6.2.5). Similar to the previous analysis, the low capital cost system alternatives have relatively minor effect in reducing the Region's debt capacity. When compared to the current 82% level of remaining capacity, the existing/committed program (81%), the direct cost and expanded blue box (79%) do not absorb a significant amount of remaining debt capacity. The wet/dry system and the mixed waste systems, however, absorb large amounts of debt capacity, leaving Durham with 70% and 64% respectively.

As a result of the effects, the existing system is the highest ranked, followed by the existing/committed as the second highest ranked. The direct cost and expanded blue box systems ranked third highest followed by the wet/dry system. The mixed waste system ranked lowest.

**Durham Region
Effect of Diversion Costs
on Debt Capacity**

Table 5.2.5

Residential System	Total Available Debt Capacity (\$000)	Current Remaining Debt Capacity (\$000)	Total Diversion Debt (\$000)	Percent Capacity Remaining
Existing System (1992)	\$444,485	\$372,561	\$9,697	82%
Existing/Committed	444,485	372,561	13,858	81%
Direct Cost/Tax Neutral A	444,485	372,561	20,436	79%
Direct Cost/Added Tax B	444,485	372,561	20,436	79%
Expanded Blue Box	444,485	372,561	21,635	79%
Wet/Dry	444,485	372,561	60,186	70%
Mixed Waste/Low Quality Compost A	444,485	372,561	88,336	64%
Mixed Waste/High Quality Compost B	444,485	372,561	88,336	64%

Source: Future Urban Research

5.2.3 Potential Impact on Municipal Reserve Funds

As discussed in the system descriptions, the direct cost/added tax system has the capacity of generating \$16.2 million in revenue that could be placed into reserves and used for other waste management/waste diversion activities. The cost to the household would approximate \$88.85. Further, the \$16.2 million in additional taxation represents approximately 42% of annual operating results. This compares to a ratio of reserves to operating expenses of approximately

39% for all other systems.

As a result, the direct cost/added tax system ranked highest while all other systems ranked lowest.

5.2.4 Potential Impact on the Level of Municipal Services

To estimate the effect of each system, the relative level of annual diversion costs was compared to total operating expenditures. In this way, decreases in the level of service resulting from cost increases due to diversion activities can be captured. Cost increases that ranged from 0% to 3% of expenditures were considered to have a low effect. Cost increases of 4% to 6% were considered to have a medium effect and cost increases above 7% were considered to be high.

Table 5.2.6 indicates that both the existing and the existing/committed and direct cost systems would have a low impact on the municipal service level and ranked highest. The expanded blue box and wet/dry systems would have a medium effect on municipal services and ranked second highest. While the mixed waste systems would have a high effect and ranked lowest. However, it should be noted that Durham Region has the discretion to use reserve funds to offset the impact of any of the alternatives put forth to soften the effects.

5.2.5 Potential Impact on the Provincial Treasury

Pending funding arrangements with Durham Region, one third of the capital costs of the alternative systems may be funded externally. While the primary source of funds may be Provincial grants, the analysis does not exclude the possibility of other private funding sources. If this were the case, the alternative systems in Durham may be funded as follows:

Existing	\$2.9 million
Existing/Committed	4.1 million
Direct Cost	6.1 million
Expanded Blue Box	6.4 million
Wet/Dry	18.0 million
Mixed Waste	26.4 million

Table 5.2.6

**Durham Region
Operating Costs Related to
the Diversion Alternatives**

Residential System	Total Existing Expenditures (\$000)	Added Diversion Expenditures (\$000)	Percent Increase
Existing System (1992)	\$571,369	\$7,269	1.2%
Existing/Committed	571,369	12,815	2.2%
Direct Cost/Tax Neutral A	571,369	16,264	2.8%
Direct Cost/Added Tax) B	571,369	32,464	5.7%
Expanded Blue Box	571,369	17,529	3.1%
Wet/Dry	571,369	21,182	3.7%
Mixed Waste/Low Quality Compost A	571,369	33,503	5.9%
Mixed Waste/High Quality Compost B	571,369	35,853	6.3%

Source: Future Urban Research

5.2.6 Potential Impact on Private Sector Industries

Table 5.2.7 shows the level of private sector taxation in Durham for each diversion system. While taxes currently collected from the business sector now approach \$69.2 million, the percent of tax specifically related to diversion for each system ranges from 3% for the existing system, with the existing/committed system representing 6% and a medium effect. The direct cost (added revenue bag charges are only residentially related), expanded blue box, wet/dry and mixed waste systems all represent a 7% share of taxes and have a high effect. It should be noted that a percentage increase in the share of taxes relates directly to an increase in taxes.

Table 5.2.7

**Durham Region
System Effects on Business Taxes**

Residential System	Total Existing Business Taxes (\$000)	Total Added Taxes Due To Diversion (\$000)	Share of Taxation
Existing System (1992)	\$69,236	\$2,253	3%
Existing/Committed	69,236	3,973	6%
Direct Cost/Tax Neutral A	69,236	5,042	7%
Direct Cost/Added Tax) B	69,236	5,042	7%
Expanded Blue Box	69,236	5,434	8%
Wet/Dry	69,236	6,567	9%
Mixed Waste/Low Quality Compost A	69,236	10,386	15%
Mixed Waste/High Quality Compost B	69,236	11,115	16%

Source: Future Urban Research

5.2.7 Summary of Effects Analysis

Table 5.2.8 summarizes the effects by criterion and indicator for Durham Region. The system alternatives were ranked by the criteria and indicators within the Municipal Finance discipline.

The highest ranked system was the existing system. The existing system represents the least cost to the tax payers (municipal and business) and presents the lowest increase in debt costs. Following the existing system, the existing/committed program ranked second as the tax increases and resulting debt burdens do not represent significant effects. The direct cost systems represent very different revenue strategies which is reflected in the ranking. The direct cost/tax neutral system imposes a low cost per household. The direct cost/added tax system imposes an additional cost to the tax payers which is unrelated to service received. This revenue, however, represents an addition to Durham Region's reserves, which is available to assist in further waste management financing. As such, these added funds would be returned to Durham's tax payers in the future. Since these added charges, however, are collected as a fee for waste management, it is suggested that the funds be used only for waste management purposes and not to decrease

general levy requirements for other municipal services. It is for this reason that the direct cost/added tax system ranked just below the direct cost/tax neutral system, as the third lowest ranked.

The direct cost/tax neutral and the expanded blue box systems ranked together as the third highest. Both systems were similar in terms of their impact on local taxpayers, impact on debt burden and impact on level of service.

The mixed waste systems are the lowest ranked systems because they represent the highest tax effects and also carry the highest capital cost. Similarly, while less burdensome, the wet/dry system also represents a lower ranked system, although it has lower tax and debt effects than the mixed waste systems. (Table 5.2.8)

5.2.8 SENSITIVITY ANALYSIS

To confirm this ranking, the municipal finance component also undertook a sensitivity analysis on the key variables that may affect the criteria and indicators. The sensitivity analysis examined variations in capital costs, variations in operating cost, and household growth including a no growth scenario. While changing the value of the indicators shown above, the sensitivity analysis shows that, given the ranges tested, the general ranking of the systems shown above would not significantly change.

TABLE 5.2.8
DURHAM REGION
NET EFFECTS SUMMARY FOR MUNICIPAL FINANCE

Goal/Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3A Direct Cost (tax neutral)	System 3B Direct Cost (added tax)	System 4 Expanded Blue Box	System 5 Wet/Dry	System 6A Mixed Waste (low quality compost)	System 6B Mixed Waste (high quality compost)
Municipal Finance (Overall Ranking)	Highest ranked	Second highest ranked	Third Highest ranked	Third Lowest ranked	Third highest ranked	Second Lowest ranked	Lowest ranked	Lowest ranked
Impact on Local Taxpayers	Highest ranked due to:	Second highest ranked due to:	Second highest ranked due to:	Lowest ranked due to:	Second highest ranked due to:	Lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:
• Tax levy (\$)	7,269,337	12,815,307	16,264,893	32,464,893	17,529,610	21,182,775	33,503,317	35,853,238
• Tax per household (\$)	36	57	70	139	74	88	135	144
• Share of taxation (%)	2%	4%	4%	10%	5%	6%	9%	9%
Impact on Municipal Debt Burden	Highest ranked due to:	Second highest ranked due to:	Third highest ranked due to:	Third highest ranked due to:	Third highest ranked due to:	Second lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:
• Amount of debt (\$)	9,697,000	13,858,000	20,436,000	20,436,000	21,635,000	60,186,000	88,336,000	88,336,000
• Debt payments (\$)	1,511,000	2,159,000	3,184,000	3,184,000	3,371,000	9,378,000	13,765,000	13,765,000
• Debt capacity (%)	82%	81%	79%	79%	79%	70%	64%	64%
Impact on Municipal Reserves	Lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:	Highest ranked due to:	Lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:
• Total reserves (\$)	0	0	0	16,200,000	0	0	0	0
• Reserves/household(\$)	0	0	0	88.85	0	0	0	0
• Reserves/expenses (%)	39%	39%	39%	42%	39%	39%	39%	39%
Impact on Municipal Level of Service	Highest ranked due to:	Highest ranked due to:	Highest ranked due to:	Highest ranked due to:	Second highest ranked due to:	Second highest ranked due to:	Lowest ranked due to:	Lowest ranked due to:
• Operating cost (\$)	7,269,337	12,815,307	16,264,893	16,264,893	17,529,610	21,182,775	33,503,317	35,853,238
• Percent Increase (%)	1%	2%	3%	3%	3%	4%	6%	6%
Impact on Private Sector Industries	Highest ranked due to:	Second Highest ranked due to:	Lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:
• Private funding (\$)	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e
• Costs (\$)	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e
• Higher prices (\$)	n/e	n/e	n/e	n/e	n/e	n/e	n/e	n/e
• Share of Private taxes (%)	3%	6%	7%	7%	8%	9%	15%	16%
n/e -- no effect on residential systems								

SENSITIVITY ANALYSIS
DURHAM

Table 5.2.9

	Existing	Committed	Direct Cost A	Direct Cost B Expanded	Wet/Dry	Mixed a	Mixed b		
Household Costs		36	57	70	159	74	88	135	144
Capital Costs									
10%	37	58	72	161	77	94	144	157	
20%	38	60	74	163	79	101	153	162	
-10%	35	55	67	156	72	82	126	135	
Revenue									
10%	n/a	53	65	154	70	84	129	137	
20%	n/a	49	61	150	65	80	122	129	
30%	n/a	46	57	146	60	76	116	122	
Operating Cost									
10%	n/a	60	74	163	79	92	141	151	
20%	n/a	64	78	167	84	96	148	158	
30%	n/a	67	83	172	88	100	154	166	
Household Growth									
no growth*	n/a	63	80	195	86	104	164	176	
2015	n/a	48	56	109	59	67	95	100	

* Without growth some operating and capital costs may not be required.

n/a = not applicable

Source: Future Urban Research

5.3 METROPOLITAN TORONTO

Each of the system alternatives for Metropolitan Toronto have been described in the GTA 3Rs EA Input document prepared by M.M. Dillon Limited, Consulting Engineers and Planners and are also presented in schedule G appended to this report. There are, however, specific cost and revenue elements associated with each of the diversion alternatives. From a financial perspective, each system can be summarized as follows:

- a) **Existing System:** This system includes the facilities and programs/services presented in the existing system descriptions, plus any capital costs required as a result of keeping pace with existing service levels.

Based on information provided by RIS, capital costs required to provide the facilities/programs to maintain existing service levels are as follows:

- \$6.5 million for a new MRF (20,600 tonnes/year)
- \$590,000 to distribute 9,800 backyard composters

- b) **Existing/Committed System:** In total, Metro region is expected to incur \$13.0 million in capital expenditures.

- \$2,423,000 for MRF improvements
- \$9,100,000 for a new MRF (36,600 tonnes/year)
- \$609,000 for the distribution of backyard composters
- \$500,000 for leaf and yard waste bunkers
- \$1,900,000 for leaf and yard waste composting improvements
- \$1,386,000 for miscellaneous recycling projects
- \$98,000 for wood shredding facilities

- c) **Direct Cost:** This system would charge for the amount of waste placed curbside. This suggests that Metro Region would have two options for charging for waste collection. Under a **tax neutral** approach, no additional revenue would be charged for waste and diversion collection purposes from the home owners beyond what is now collected via municipal taxes. That is, added direct cost revenue would be netted from collection costs before household tax rates are determined.

Under an **added tax** direct cost system, garbage bag charges would be levied in addition to normal property taxes that include waste diversion and disposal collection costs. The

extra revenue, while representing an added charge to the homeowner, would then be available to the Region to assist in financing other diversion and waste management activities. This analysis assumed that the added charges would yield approximately \$59.8 million per year to Metro Region. This cost to the household approaches \$100 for households with curbside service.

Based on information provided by RIS, capital costs required to provide the facilities/programs to provide this system are as follows:

- \$16,100,000 for a new MRF (95,000 tonnes/year)
- \$15,450,000 for 257,500 backyard composters
- \$500,000 for leaf and yard waste bunkers
- \$1,900,000 for leaf and yard waste composting improvements
- \$1,386,000 for miscellaneous recycling projects
- \$98,000 for wood shredding facilities
- \$2,423,000 for MRF improvements

d) **Expanded Blue Box:** Includes a cost of \$43.0 million for following:

- \$500,000 for leaf and yard waste bunkers
- \$1,900,000 for leaf and yard waste composting improvements
- \$1,386,000 for miscellaneous recycling projects
- \$98,000 for wood shredding facilities
- \$2,423,000 for MRF improvements
- \$20,900,000 for a new MRF (197,000 tonnes/year)
- \$15,450,000 for 257,300 backyard composters

e) **Wet/Dry:** This system would include additional capital costs, these include:

- \$500,000 for leaf and yard waste bunkers
- \$1,900,000 for leaf and yard waste composting improvements
- \$1,386,000 for miscellaneous recycling projects
- \$98,000 for wood shredding facilities
- \$2,423,000 for MRF improvements
- \$20,900,000 for a new MRF (197,000 tonnes/year)
- \$15,450,000 for 257,500 backyard composters
- \$49,000,000 for 490,800 roll-out carts
- \$50,000,000 for a composting facility (242,000 tonnes/year)

f) **Mixed Waste:** This system would require \$259.8 million expenditure for the following:

- \$500,000 for leaf and yard waste bunkers
- \$1,900,000 for leaf and yard waste composting improvements
- \$1,386,000 for miscellaneous recycling projects
- \$98,000 for wood shredding facilities

- \$2,423,000 for MRF improvements
- \$9,100,000 for a new MRF (36,600 tonnes/year)
- \$15,450,000 for 297,500 backyard composters
- \$249,000,000 for 2 mixed waste and composting plants
(467 tonnes/year each)

5.3.1 Potential Impact on Local Taxpayers

The following describes the system net effects on the local taxpayers. Table 5.3.1 indicates that, when all elements are considered, gross costs in Metro Region may range from the existing level of \$48.1 million per year to \$199.3 million per year for the mixed waste A system. Further, while the existing/committed program may present a gross annual operating cost of \$54.0 million per year, the direct cost/tax neutral system may approach \$60.0 million per year, with a direct cost/added tax system approaching \$111.0 million in annual levy costs.

The household cost of diversion may also be compared to the level of municipal taxation paid in Metro Region. In 1992, represented \$26.00 per household, or a 1.5% share of total municipal taxes of \$1,355.00 per household per year (excluding school taxes). To estimate the future effects of an increasing tax base on the diversion alternatives the analysis included household growth estimates for Metro.

Household costs range between \$26.00 and \$102.00 for the various alternatives, the existing system (\$26.00), the existing/committed system (\$29.00), the direct cost/tax neutral system (\$32.00), the expanded blue box system (\$38.00) and wet/dry (\$34.00) all represent from 1% to 3% of household taxes. Further, the direct cost/added tax system (86.00 per household), represents 6% of current average household taxes while the mixed waste systems represent a taxation share of above 7%. (Table 5.3.2)

To estimate the effect of each system, a share of taxation guideline was utilized. For example, if taxation specifically related to diversion ranged from 0% to 3% of household taxes it was considered to have a low effect, while a share of 4% to 6% was considered to have a medium effect, and a share above 7% was considered to be high. It should be noted that a percentage increase in the share of taxes relates directly to an increase in taxes.

Table 5.3.1
Metro Toronto
Cost of Alternative Diversion Systems
Net Annual Diversion Costs -- General Levy

Residential System	Gross Cost	
Existing System	\$48,151,759	
Existing/Committed Program	54,005,554	
Direct Cost/Tax Neutral A	60,094,207	
Direct Cost/Added Tax B	111,094,207	
Expanded Blue Box	70,337,710	
Wet / Dry	63,441,995	
Mixed Waste/Low Quality Compost A	178,053,123	
Mixed Waste/High Quality Compost B	199,315,562	

Source: Future Urban Research

Based on this, the existing, existing/committed, direct cost/tax neutral, expanded blue box and wet/dry systems would have a low effect on local tax payers and ranked highest. The direct cost/added tax system would have a medium effect and ranked second highest, while the mixed waste systems would have a high effect on local taxpayers and ranked lowest.

Table 5.3.2

**Metro Toronto
Percent of Diversion Costs to
Household Municipal Taxes**

Residential System	Current Total Municipal Taxation Per Household	Cost of Diversion Per Household	Share of Taxation
Existing System	\$1,355.00	\$26.00	2%
Existing/Committed	1,355.00	29.00	2%
Direct Cost/Tax Neutral A	1,355.00	32.00	2%
Direct Cost/Added Tax) B	1,355.00	86.00	6%
Expanded Blue Box	1,355.00	38.00	3%
Wet/Dry	1,355.00	34.00	3%
Mixed Waste/Low Quality Compost A	1,355.00	92.00	7%
Mixed Waste/High Quality Compost B	1,355.00	102.00	8%

Source: Future Urban Research

5.3.2 Potential Impact on the Debt Burden of the Municipalities

This analysis assumed that the full capital cost of future diversion commitments would be annualized at 9% over a 10 year period. The effect of increasing the existing debt position in Metro Region on each alternative is shown on Table 5.3.3.

The mixed waste alternatives had the largest capital programs and highest effect on debt. These systems significantly affect Metro Region's associated debt burden. Since the existing, existing/committed, direct cost and expanded blue box systems have lower capital requirements, Metro's debt burden is affected the least.

Table 5.3.3

**Metro Toronto
Capital Costs Related to
the Diversion Alternatives**

Residential System	Total Existing Debt (\$000)	Total Diversion Debt (\$000)	Percent Increase
Existing System (1992)	\$1,050,386	\$7,090	1%
Existing/Committed	1,050,386	16,025	2%
Direct Cost/Tax Neutral A	1,050,386	37,866	4%
Direct Cost/Added Tax) B	1,050,386	37,866	4%
Expanded Blue Box	1,050,386	42,666	4%
Wet/Dry	1,050,386	141,746	13%
Mixed Waste/Low Quality Compost A	1,050,386	279,866	27%
Mixed Waste/High Quality Compost B	1,050,386	279,866	27%

Source: Future Urban Research

An examination of Metro Region's existing debt charge position, that is, the comparison of debt payments (including principal and interest) to operating expenditures, debt charges represented 4.4% of costs. The future diversion alternatives have the effect of changing these ratios for most systems. With the direct cost and expanded blue box systems, the ratio of debt charges to expenditures may increase to 4.5%. With the wet/dry system debt charges may increase to 4.8%. With the mixed waste systems, debt charges may increase to 5.2%. This analysis is presented in Table 5.3.4.

Table 5.3.4

**Metro Toronto
Effect of Diversion Costs on
Municipal Debt Charges**

Residential System	Existing Debt Charges as a Percent of Expenditures	Future Debt Charges as a Percent of Expenditures
Existing System (1992)	4.4%	4.4%
Existing/Committed	4.4%	4.4%
Direct Cost/Tax Neutral A	4.4%	4.5%
Direct Cost/Added Tax B	4.4%	4.5%
Expanded Blue Box	4.4%	4.5%
Wet/Dry	4.4%	4.8%
Mixed Waste/Low Quality Compost A	4.4%	5.2%
Mixed Waste/High Quality Compost B	4.4%	5.2%

Source: Future Urban Research

Debt capacity calculations (the ratio of debt charges to operating expenditures) determine the amount of available debt permitted by the Ministry of Municipal Affairs (former OMB guideline). When estimating debt capacity, a 9% interest rate and a ten year term was used, the total debt capacity for Metro Region approached \$4,109.9 million (Table 5.3.5). The capital costs for all systems aside from mixed waste allow debt capacity to remain at or above 71%. However, the mixed waste systems absorb the largest amount of debt capacity, leaving Metro with just 68% of its debt capacity.

The existing and existing/committed systems ranked highest. The direct cost and expanded blue box ranked second highest followed by the wet/dry system as the third highest. The mixed waste system ranked lowest.

**Metro Toronto
Effect of Diversion Costs
on Debt Capacity**

Table 5.3.5

Residential System	Total Available Debt Capacity (\$000)	Current Remaining Debt Capacity (\$000)	Total Diversion Debt (\$000)	Percent Capacity Remaining
Existing System (1992)	\$4,109,937	\$3,059,551	\$7,090	74%
Existing/Committed	4,109,937	3,059,551	16,025	74%
Direct Cost/Tax Neutral A	4,109,937	3,059,551	37,866	74%
Direct Cost/Added Tax B	4,109,937	3,059,551	37,866	74%
Expanded Blue Box	4,109,937	3,059,551	42,666	73%
Wet/Dry	4,109,937	3,059,551	141,746	71%
Mixed Waste/Low Quality Compost A	4,109,937	3,059,551	279,866	68%
Mixed Waste/High Quality Compost B	4,109,937	3,059,551	279,866	68%

Source: Future Urban Research

5.3.3 Potential Impact on Municipal Reserve Funds

As discussed in the system descriptions the direct cost/added tax system had the capacity of generating \$51.0 million in revenue that could be placed into reserves and used for other waste management/waste diversion activities. The cost to the household would approximate \$53.31. Further, the \$51.0 million in additional taxation represents approximately 19% of annual operating results. This compares to a ratio of reserves to operating expenditures of 18% for all other alternatives.

As a result of this, the direct cost/added tax system is the highest ranked because it adds to the Metro's reserve fund position. The remaining systems: the existing, the existing/committed, the direct cost/tax neutral, the wet/dry, expanded blue box and mixed waste systems do not impact the reserve fund and ranked lowest.

5.3.4 Potential Impact on the Level of Municipal Services

To estimate the effect of each system, the relative level of annual diversion costs was compared to total operating expenditures. In this way, decreases in the level of service resulting from cost increases due to diversion can be captured.

Table 5.3.6 indicates that all systems other than the mixed waste systems would have a low effect on municipal service levels and as a result ranked highest. The mixed waste system ranked lowest. However, it should be noted that Metro Region has the discretion to use reserve funds to offset the impact of any of the alternatives put forth to soften the effects.

Table 5.3.6

**Metro Toronto
Operating Costs Related to
the Diversion Alternatives**

Residential System	Total Existing Expenditures (\$000)	Added Diversion Expenditures (\$000)	Percent Increase
Existing System (1992)	\$5,283,169	\$48,151	1.0%
Existing/Committed	5,283,169	54,005	1.0%
Direct Cost/Tax Neutral A	5,283,169	60,094	1.0%
Direct Cost/Added Tax) B	5,283,169	60,094	1.0%
Expanded Blue Box	5,283,169	70,337	1.0%
Wet/Dry	5,283,169	63,441	1.0%
Mixed Waste/Low Quality Compost A	5,283,169	178,053	3.0%
Mixed Waste/High Quality Compost B	5,283,169	199,315	3.0%

Source: Future Urban Research

5.3.5 Potential Impact on the Provincial Treasury

Pending funding arrangements with Metro Toronto, one third of the capital costs of the alternative systems may be funded externally. While the primary source of funds may be Provincial grants, the analysis does not exclude the possibility of other private funding sources. If this were the case, the alternative systems in Metro may be funded as follows:

Existing	\$2.1 million
Existing/Committed	4.8 million
Direct Cost	11.4 million
Expanded Blue Box	12.7 million
Wet/Dry	14.3 million
Mixed Waste	29.6 million

5.3.6 Potential Impact on Private Sector Industries

Table 5.3.7 shows the level of private sector taxation in Metro for each diversion system. While taxes currently collected from the business sector now approach \$1.0 billion, tax charges for each system range from 2% for the existing and existing/committed systems and 3% for both direct cost systems (added revenue bag charges are only residentially related), the expanded blue box and the wet/dry, 8% for the mixed waste A system and 9% for the mixed waste B system. As a result, all systems are ranked highest except the mixed waste system. It should be noted that a percentage increase in the share of taxes relates directly to an increase in taxes.

Table 5.3.7

**Metro Toronto
System Effects on Business Taxes**

Residential System	Total Existing Business Taxes (\$000)	Total Added Taxes Due To Diversion (\$000)	Share of Taxation
Existing System (1992)	\$1,061,613	\$25,039	2%
Existing/Committed	1,061,613	28,083	2%
Direct Cost/Tax Neutral A	1,061,613	31,249	3%
Direct Cost/Added Tax) B	1,061,613	31,249	3%
Expanded Blue Box	1,061,613	36,576	3%
Wet/Dry	1,061,613	32,990	3%
Mixed Waste/Low Quality Compost A	1,061,613	92,588	8%
Mixed Waste/High Quality Compost B	1,061,613	103,644	9%

Source: Future Urban Research

5.3.7 Summary of Effects Analysis

The following summarizes the above effects by criteria and indicator for Metropolitan Toronto and is presented on Table 5.3.8.

The existing, existing/committed, direct cost/tax neutral, expanded blue box and wet/dry systems are the highest ranked. These systems would have the least cost impact on the tax payers in Metro and do not present significant debt costs to the financial structure. The direct cost/added tax system imposes an additional cost to the tax payers which is unrelated to service received. This revenue, however, represents an addition to Metro's reserves, which are then available to assist in further waste management financing for other projects. As such, these added funds would be returned to tax payers in the future. Since these added charges, however, are collected as a fee for waste management, it is suggested that the funds be used only for waste management purposes and not to decrease general levy requirements for other municipal services. As a result,

the system represents the second lowest ranked.

The mixed waste is the lowest ranked system because it carries the highest tax effects and also the highest capital costs. (Table 5.3.8)

5.3.8 Sensitivity Analysis

To confirm this ranking, the municipal finance component also undertook a sensitivity analysis on the key variables that may affect the criteria and indicators. The sensitivity analysis examined variations in capital costs, variations in operating cost, and household growth including a no growth scenario. While changing the value of the indicators shown above, the sensitivity analysis shows that, given the ranges tested, the general ranking of the systems shown above would not significantly change.

TABLE 5.3.8
METROPOLITAN TORONTO
NET EFFECTS SUMMARY FOR MUNICIPAL FINANCE

Goal/Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3A Direct Cost (tax neutral)	System 3B Direct Cost (added tax)	System 4 Expanded Blue Box	System 5 Wet/Dry	System 6A Mixed Waste (low quality compost)	System 6B Mixed Waste (high quality compost)
Municipal Finance (Overall Ranking)	Highest ranked	Highest ranked	Highest ranked	Second Lowest ranked	Highest ranked	Highest ranked	Lowest ranked	Lowest ranked
Impact on Local Taxpayers	Highest ranked due to:	Highest ranked due to:	Highest ranked due to:	Second Highest ranked due to:	Highest ranked due to:	Highest ranked due to:	Lowest ranked due to:	Lowest ranked due to:
• Tax levy (\$)	48,151,759	54,005,554	60,094,207	111,094,207	70,337,710	63,441,995	178,053,123	199,315,562
• Tax per household (\$)	26	29	32	86	38	34	92	102
• Share of taxation (%)	2%	2%	2%	6%	3%	3%	7%	8%
Impact on Municipal Debt Burden	Highest ranked due to:	Highest ranked due to:	Second highest ranked due to:	Second highest ranked due to:	Second highest ranked due to:	Third Highest ranked due to:	Lowest ranked due to:	Lowest ranked due to:
• Amount of debt (\$)	7,090,000	16,025,000	37,866,000	37,866,000	42,666,000	141,746,000	279,866,000	279,866,000
• Debt payments (\$)	1,105,000	2,497,000	5,900,000	5,900,000	6,648,000	22,087,000	43,609,000	43,609,000
• Debt capacity (%)	74%	74%	74%	74%	73%	71%	68%	68%
Impact on Municipal Reserves	Lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:	Highest ranked due to:	Lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:
• Total reserves (\$)	0	0	0	51,000,000	0	0	0	0
• Reserves/ household(\$)	0	0	0	53.31	0	0	0	0
• Reserves/expenses (%)	18%	18%	18%	19%	18%	18%	18%	18%
Impact on Municipal Level of Service	Highest ranked due to:	Highest ranked due to:	Highest ranked due to:	Highest ranked due to:	Highest ranked due to:	Highest ranked due to:	Lowest ranked due to:	Lowest ranked due to:
• Operating cost (\$)	48,151,759	54,005,554	60,094,207	60,094,207	70,337,710	63,441,995	178,053,123	199,315,562
• Percent Increase (%)	1%	1%	1%	1%	1%	1%	3%	3%
Impact on Private Sector Industries	Highest ranked due to:	Highest ranked due to:	Highest ranked due to:	Highest ranked due to:	Highest ranked due to:	Highest ranked due to:	Lowest ranked due to:	Lowest ranked due to:
• Private funding (\$)	n/c	n/c	n/c	n/c	n/c	n/c	n/c	n/c
• Costs (\$)	n/c	n/c	n/c	n/c	n/c	n/c	n/c	n/c
• Higher prices (\$)	n/c	n/c	n/c	n/c	n/c	n/c	n/c	n/c
• Share of Private taxes (%)	2%	2%	3%	3%	3%	3%	8%	9%
n/c -- no effect on residential systems								

Table 5.3.9

SENSITIVITY ANALYSIS

METRO

	Existing	Committed	Direct Cost A	Direct Cost B Expanded	Wet/Dry	Mixed a	Mixed b	
Household Costs	26	29	32	86	38	34	92	102
Capital Costs								
10%	n/a	30	33	86	38	36	95	106
20%	n/a	30	33	87	39	38	99	109
30%	n/a	30	34	87	39	40	102	113
-10%	n/a	29	32	85	37	32	88	99
Grant								
10%	n/a	27	30	83	35	32	86	96
20%	n/a	24	28	81	32	30	80	89
30%	n/a	22	25	79	29	28	75	83
Operating Cost								
10%	n/a	32	35	88	40	36	97	109
20%	n/a	34	37	90	43	38	103	115
-10%	n/a	37	40	93	46	40	108	122
Household Growth								
no growth	n/a	36	39	97	46	39	113	127
2,015	n/a	35	38	83	43	38	94	105
no growth*								
2015								

* Without growth some operating and capital costs may not be required.

n/a = not applicable

A \$135 million capital program is comparable to the financial effects
of the wet/dry system

Source: Future Urban Research

5.4 REGION OF YORK

Each of the system alternatives for York Region have been described in the GTA 3Rs EA Input document prepared by M.M. Dillon Limited, Consulting Engineers and Planners and are also presented in schedule G appended to this report. There are, however, specific cost and revenue elements associated with each of the diversion alternatives. From a financial perspective, each system can be summarized as follows:

- a) **Existing System**: This system includes the facilities and programs/services presented in the existing system descriptions, plus any capital costs required as a result of keeping pace with existing service levels.

Based on information provided by RIS, capital costs required to provide the facilities/programs to maintain existing service levels are as follows:

- \$11,100,000 for a new MRF (51,000 tonnes/year)
- \$633,000 to distribute 10,600 backyard composters

- b) **Existing/Committed System**: In total, York region is expected to incur \$14.8 million in capital expenditures.

- \$2,224,000 for a new MRF
- \$11,500,000 for a new MRF (62,000 tonnes/year)
- \$568,000 for the distribution of 9,500 backyard composters
- \$561,100 for miscellaneous recycling projects/improvements

- c) **Direct Cost**: This system would charge for the amount of waste placed curbside. This suggests that York Region would have two options for charging for waste collection. Under a **tax neutral** approach, no additional revenue would be charged for waste and diversion collection purposes from the home owners beyond what is now collected via municipal taxes. That is, added direct cost revenue would be netted from collection costs before household tax rates are determined.

Under an **added tax** direct cost system, garbage bag charges would be levied in addition to normal property taxes that include waste diversion and disposal collection costs. The extra revenue, while representing an added charge to the homeowner, would then be available to the Region to assist in financing other diversion and waste management activities. This analysis assumed that the added charges would yield approximately \$20.4 million per year to York Region. This cost to the household approaches \$100 for households that receive curbside service.

- \$14,200,000 for a new MRF (77,000 tonnes/year)
- \$7,105,000 for the distribution of 118,400 backyard composters
- \$561,100 for miscellaneous recycling projects/improvements
- \$2,224,000 for a new MRF

d) **Expanded Blue Box:** Includes an additional cost of \$25.2 million for following:

- \$15,400,000 for a new MRF (88,600 tonnes/year)
- \$7,105,000 for the distribution of 118,400 backyard composters
- \$561,100 for miscellaneous recycling projects/improvements
- \$2,224,000 for a new MRF

e) **Wet/Dry:** This system would include \$63.3 million in capital costs including:

- \$15,400,000 for a new MRF (88,600 tonnes/year)
- \$7,105,000 for the distribution of 118,400 backyard composters
- \$561,100 for miscellaneous recycling projects/improvements
- \$19,616,000 for 196,160 household carts
- \$28,700,000 for a composting plant (97,500 tonnes/year)
- \$2,224,000 for a new MRF

f) **Mixed Waste:** This system would require a \$99.5 million for the following:

- \$7,105,000 for the distribution of 118,400 backyard composters
- \$561,100 for miscellaneous recycling projects/improvements
- \$11,500,000 for a new MRF (55,000 tonnes/year)
- \$85,200,000 for a mixed waste/composting plant (248 tonnes/year)
- \$2,224,000 for a new MRF

5.4.1 Potential Impact on Local Taxpayers

The following describes the system net effects on the local taxpayers. Table 5.4.1 indicates that, when all elements are considered, gross costs in York Region may range from the existing level of \$6.8 million per year to \$46.1 million per year for the mixed waste B system. Further, while the existing/committed expansion program may present a gross annual operating cost of \$11.6 million per year, the direct cost/tax neutral system may approach \$15.7 million per year, with a direct cost/added tax system approaching \$36.1 million in annual levy costs.

Table 5.4.1
York Region
Cost of Alternative Diversion Systems
Net Annual Diversion Costs -- General Levy

Residential System	Gross Costs	
Existing System	\$6,816,445	
Existing/Committed Program	11,655,865	
Direct Cost/Tax Neutral A	15,708,196	
Direct Cost/Added Tax B	36,108,196	
Expanded Blue Box	16,078,818	
Wet / Dry	24,583,692	
Mixed Waste/Low Quality Compost A	41,552,524	
Mixed Waste/High Quality Compost B	46,152,961	

Source: Future Urban Research

The household cost of diversion may also be compared to the level of municipal taxation paid in York Region. In 1992, diversion activities represented \$21.00 per household, or 1.7% of total municipal taxes of \$1,223.00 per household per year (excluding school taxes). To estimate the future effects of an increasing tax base on the diversion alternatives the analysis included household growth estimates for York.

To estimate the effect of each system, a share of taxation guideline was utilized. For example, if taxation specifically related to diversion ranged from 0% to 3% of household taxes it was considered to have a low effect, while a share of 4% to 6% was considered to have a medium effect, and a share above 7% was considered to be high. It should be noted that a percentage increase in the share of taxes related directly to an increase in taxes.

Household costs range between \$29.00 and \$150.00 for the various alternatives. The existing/committed system (\$44.00), the direct cost/tax neutral system (\$56.00) and the expanded blue box system (\$57.00) all represent from 4% to 6% of household taxes and were considered to have a medium effect. Further, the wet/dry system (\$83.00), direct cost/added tax (\$149.00) and mixed waste systems (\$136.00 and \$150.00 respectively) all represent a share of above 7% and were considered to have a high effect.

The existing system ranked highest followed by the existing/committed, direct cost and expanded blue box systems as second highest. All other systems ranked lowest.

Table 5.4.2

**York Region
Percent of Diversion Costs to
Household Municipal Taxes**

Residential System	Current Total Municipal Taxation Per Household	Cost of Diversion Per Household	Share of Taxation
Existing System	\$1,223.00	\$29.00	2%
Existing/Committed	1,223.00	44.00	4%
Direct Cost/Tax Neutral A	1,223.00	56.00	5%
Direct Cost/Added Tax) B	1,223.00	149.00	12%
Expanded Blue Box	1,223.00	57.00	5%
Wet/Dry	1,223.00	83.00	7%
Mixed Waste/Low Quality Compost A	1,223.00	136.00	11%
Mixed Waste/High Quality Compost B	1,223.00	150.00	12%

Source: Future Urban Research

5.4.2 Potential Impact on the Debt Burden of the Municipalities

This analysis assumed that the full capital cost of future diversion commitments would be annualized at 9% over a 10 year period. The effect of increasing the existing debt position in York Region on each alternative is shown on Table 5.4.3.

Since the existing and existing/committed systems require the least level of additional debt and as a result of having the lowest capital costs they ranked highest. The expanded blue box and direct cost systems have similar capital requirements, and York's debt burden is similarly affected, these systems are second highest. The wet/dry system is the second lowest ranked system. The mixed waste systems have the largest capital programs and affect the Region's debt

burden the most and, therefore, are the lowest ranked systems.

Table 5.4.3

**York Region
Capital Costs Related to
the Diversion Alternatives**

Residential System	Total Existing Debt (\$000)	Total Diversion Debt (\$000)	Percent Increase
Existing System (1992)	\$133,458	\$11,733	9%
Existing/Committed	133,458	14,853	11%
Direct Cost/Tax Neutral A	133,458	24,090	18%
Direct Cost/Added Tax) B	133,458	24,090	18%
Expanded Blue Box	133,458	25,290	19%
Wet/Dry	133,458	73,606	55%
Mixed Waste/Low Quality Compost A	133,458	106,690	80%
Mixed Waste/High Quality Compost B	133,458	106,690	80%

Source: Future Urban Research

An examination of York Region's existing debt charge position, that is, the comparison of debt payments (including principal and interest) to operating expenditures, indicated that debt charges represented 2.6% of operating costs. The future diversion alternatives have the effect of changing these ratios for all systems. The continuation of existing service levels and the existing/committed program may raise debt charges to 2.9 and 3.0% of expenditures respectively. For the direct cost and expanded blue box systems, the ratio of debt charges to expenditures may increase to 3.2%. With the wet/dry system at 4.5% and the mixed waste systems, debt charges may increase to 5.4%. This analysis is presented in Table 5.4.4.

**York Region
Effect of Diversion Costs on
Municipal Debt Charges**

Table 5.4.4

Residential System	Existing Debt Charges as a Percent of Expenditures	Future Debt Charges as a Percent of Expenditures
Existing System (1992)	2.6%	2.9%
Existing/Committed	2.6%	3.0%
Direct Cost/Tax Neutral A	2.6%	3.2%
Direct Cost/Added Tax B	2.6%	3.2%
Expanded Blue Box	2.6%	3.2%
Wet/Dry	2.6%	4.5%
Mixed Waste/Low Quality Compost A	2.6%	5.4%
Mixed Waste/High Quality Compost B	2.6%	5.4%

Source: Future Urban Research

Debt capacity calculations (the ratio of debt charges to operating expenditures) determines the amount of available debt permitted by the Ministry of Municipal Affairs (former OMB guideline). When estimating debt capacity (a 9% interest rate and a 10 year term was used), the total debt capacity for York Region approached \$461.1 million (Table 5.4.5). The capital costs for the mixed waste systems reduce the Region's debt capacity to 48%, while wet/dry reduces capacity to 55%. These are the lowest and second lowest ranked systems respectively. The existing and existing/committed systems absorb the least amount of debt, leaving York with 69% and 68% respectively and were the highest ranked systems. The expanded blue box and direct cost systems are second highest ranked systems reducing the debt capacity to 66%.

Table 5.4.5

**York Region
Effect of Diversion Costs
on Debt Capacity**

Residential System	Total Available Debt Capacity (\$000)	Current Remaining Debt Capacity (\$000)	Total Diversion Debt (\$000)	Percent Capacity Remaining
Existing System (1992)	\$461,198	\$327,740	\$11,733	69%
Existing/Committed	461,198	327,740	14,853	68%
Direct Cost/Tax Neutral A	461,198	327,740	24,090	66%
Direct Cost/Added Tax B	461,198	327,740	24,090	66%
Expanded Blue Box	461,198	327,740	25,290	66%
Wet/Dry	461,198	327,740	73,606	55%
Mixed Waste/Low Quality Compost A	461,198	327,740	106,690	48%
Mixed Waste/High Quality Compost B	461,198	327,740	106,690	48%

Source: Future Urban Research

5.4.3 Potential Impact on Municipal Reserve Funds

Under the system descriptions, the direct cost added tax system had the capacity of generating \$20.4 million in revenue that could be placed into reserves and used for other waste management/waste diversion activities. The cost to the household would approximate \$92.56. Further, the \$20.4 million in additional taxation represents approximately 52% of annual

operating results. This compares to a ratio of reserves to operating expenditures of 49% for all other systems.

As a result of this, the direct cost/added tax system is the highest ranked since it adds to the Region's reserve fund position. Conversely, the remaining systems including: existing, existing/committed, direct cost/tax neutral, wet/dry, mixed waste and the expanded blue box are the lowest ranked even though they do not affect the reserve fund.

5.4.4 Potential Impact on the Level of Municipal Services

To estimate the effect of each system, the relative level of annual diversion costs was compared to total operating expenditures. In this way, decreases in the level of service resulting from cost increases due to diversion can be captured. Cost increases that ranged from 0% to 3% of expenditures were considered to have a low effect. Cost increases of 4% to 6% were considered to have a medium effect and cost increases above 7% were considered to be high.

Table 5.4.6 indicates that the existing, existing/committed, direct cost and expanded blue box systems would all have a low effect on municipal service levels and ranked highest. Conversely, the mixed waste systems would have a high effect on municipal service levels and ranked lowest. The wet/dry system would as a result of its operating costs have a medium effect on municipal service levels and ranked second highest. However, it should be noted that York Region has the discretion to use reserve funds to offset the impact of any of the alternatives put forth to soften the effects of any of the systems.

5.4.5 Potential Impact on the Provincial Treasury

Pending funding arrangements with York Region, one third of the capital costs of the alternative systems may be funded externally. While the primary source of funds may be Provincial grants, the analysis does not exclude the possibility of other private funding sources. If this were the case, the alternative systems in York may be funded as follows:

Existing	\$3.5 million
Existing/Committed	4.4 million
Direct Cost	7.2 million
Expanded Blue Box	7.5 million
Wet/Dry	22.0 million
Mixed Waste	31.9 million

Table 5.4.6

**York Region
Operating Costs Related to
the Diversion Alternatives**

Residential System	Total Existing Expenditures (\$000)	Added Diversion Expenditures (\$000)	Percent Increase
Existing System (1992)	\$592,853	\$6,816	1.1%
Existing/Committed	592,853	11,655	2.0%
Direct Cost/Tax Neutral A	592,853	15,708	2.6%
Direct Cost/Added Tax) B	592,853	15,708	2.6%
Expanded Blue Box	592,853	16,078	2.7%
Wet/Dry	592,853	24,583	4.1%
Mixed Waste/Low Quality Compost A	592,853	41,552	7.0%
Mixed Waste/High Quality Compost B	592,853	46,152	7.8%

Source: Future Urban Research

5.4.6 Potential Impact on Private Sector Industries

Table 5.4.7 shows the level of private sector taxation in York for each diversion system. While taxes currently collected from the business sector now approach \$77.9 million, tax charges for each system range from 3% for the existing system to 4% for the existing/committed. The direct cost and expanded blue box systems share of taxation would be 6%. The wet/dry and mixed waste systems share of taxation would be 9%, 16% and 17% respectively. It should be noted that a percentage increase in the share of taxes relates directly to an increase in taxes.

The existing system ranked highest followed by the existing/committed, direct cost and expanded blue box systems as second highest. The wet/dry and mixed waste systems ranked lowest.

Table 5.4.7

**York Region
System Effects on Business Taxes**

Residential System	Total Existing Business Taxes (\$000)	Total Added Taxes Due To Diversion (\$000)	Share of Taxation
Existing System (1992)	\$77,948	\$2,181	3%
Existing/Committed	77,948	3,730	4%
Direct Cost/Tax Neutral A	77,948	5,027	6%
Direct Cost/Added Tax) B	77,948	5,027	6%
Expanded Blue Box	77,948	5,145	6%
Wet/Dry	77,948	7,867	9%
Mixed Waste/Low Quality Compost A	77,948	13,297	16%
Mixed Waste/High Quality Compost B	77,948	14,769	17%

Source: Future Urban Research

5.4.7 Summary of Effects Analysis

The following summarizes the above effects by criteria and indicator for York Region. The system alternatives were ranked by the criteria and indicators by the Municipal Finance group. The net effects are summarized on Table 5.4.8.

The highest ranked system is the existing system. The existing system would have the least cost impact on the tax payers in York and does not present significant debt costs to the financial structure. The existing/committed represents the second highest ranked. The direct cost/tax neutral and expanded blue box systems are the third highest ranked systems. They impose a low cost per household and do not require significant capital costs. The direct cost/added tax system imposes an additional cost to the tax payers which is unrelated to service received. This revenue, however, represents an addition to York Region's reserves, which are then available to

assist in further waste management financing for other projects. As such, these added funds would be returned to tax payers in the future. Since these added charges, however, are collected as a fee for waste management, it is suggested that the funds be used only for waste management purposes and not to decrease general levy requirements for other municipal services. It is for this reason that the direct cost/added tax system ranked below the direct cost/tax neutral system as third lowest.

The mixed waste systems are the lowest ranked because they carry the highest tax effects and the highest capital costs. The second lowest ranked system was the wet/dry system because of its impact on debt capacity and municipal reserves. (Table 5.4.8)

5.4.8 Sensitivity Analysis

To confirm this ranking, the municipal finance component also undertook a sensitivity analysis on the key variables that may affect the criteria and indicators. The sensitivity analysis examined variations in capital costs, variations in operating cost, and household growth including a no growth scenario. While changing the value of the indicators shown above, the sensitivity analysis shows that, given the ranges tested, the general ranking of the systems shown above would not significantly change.

TABLE 5.4.8
REGION OF YORK
NET EFFECTS SUMMARY FOR MUNICIPAL FINANCE

Goal/Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3A Direct Cost (tax neutral)	System 3B Direct Cost (added tax)	System 4 Expanded Blue Box	System 5 Wet/Dry	System 6A Mixed Waste (low quality compost)	System 6B Mixed Waste (high quality compost)
Municipal Finance (Overall Ranking)	Highest ranked	Second highest ranked	Third Highest ranked	Third Lowest ranked	Third Highest ranked	Second Lowest ranked	Lowest ranked	Lowest ranked
Impact on Local Taxpayers	Highest ranked due to:	Second highest ranked due to:	Second highest ranked due to:	Lowest ranked due to:	Second highest ranked due to:	Lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:
• Tax levy (\$)	6,816,445	11,655,865	15,708,196	36,108,196	16,078,818	24,583,692	41,552,524	46,152,961
• Tax per household (\$)	29	44	56	149	57	83	136	150
• Share of taxation (%)	2%	4%	5%	12%	5%	7%	11%	12%
Impact on Municipal Debt Burden	Highest ranked due to:	Highest ranked due to:	Second highest ranked due to:	Second highest ranked due to:	Second highest ranked due to:	Second Lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:
• Amount of debt (\$)	11,733,000	14,853,000	24,090,000	24,090,000	25,290,000	73,606,000	106,690,000	106,690,000
• Debt payments (\$)	1,828,000	2,314,000	3,754,000	3,754,000	3,941,000	11,469,000	16,624,000	16,624,000
• Debt capacity (%)	69%	68%	66%	66%	66%	55%	48%	48%
Impact on Municipal Reserves	Lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:	Highest ranked due to:	Lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:
• Total reserves (\$)	0	0	0	20,400,000	0	0	0	0
• Reserves/ household(\$)	0	0	0	92.56	0	0	0	0
• Reserves/expenses (%)	49%	49%	49%	52%	49%	49%	49%	49%
Impact on Municipal Level of Service	Highest ranked due to:	Highest ranked due to:	Highest ranked due to:	Highest ranked due to:	Highest ranked due to:	Second highest ranked due to:	Lowest ranked due to:	Lowest ranked due to:
• Operating cost (\$)	6,816,445	11,655,865	15,708,196	15,708,196	16,078,818	24,583,692	41,552,524	46,152,961
• Percent Increase (%)	1%	2%	3%	3%	3%	4%	7%	8%
Impact on Private Sector Industries	Highest ranked due to:	Second highest ranked due to:	Second highest ranked due to:	Second highest ranked due to:	Second highest ranked due to:	Lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:
• Private funding (\$)	n/c	n/c	n/c	n/c	n/c	n/c	n/c	n/c
• Costs (\$)	n/c	n/c	n/c	n/c	n/c	n/c	n/c	n/c
• Higher prices (\$)	n/c	n/c	n/c	n/c	n/c	n/c	n/c	n/c
• Share of Private Taxes (%)	3%	4%	6%	6%	6%	9%	16%	17%
n/c -- no effect on residential systems								

Table 5.4.9

**SENSITIVITY ANALYSIS
YORK**

	Existing	Committed	Direct Cost A	Direct Cost B Expanded	Wet/Dry	Mixed a	Mixed b.		
Household Costs		29	44	56	149	57	83	136	150
Capital Costs									
10%	n/a	45	57	150	59	87	141	155	
20%	n/a	45	59	151	60	91	147	161	
-10%	n/a	43	55	147	56	80	131	145	
Grant									
10%	n/a	41	53	145	54	80	129	142	
20%	n/a	38	49	142	50	76	123	135	
30%	n/a	35	46	139	47	73	116	127	
Operating Cost									
10%	n/a	46	59	152	61	87	142	158	
20%	n/a	49	63	155	64	91	149	165	
30%	n/a	52	66	159	68	94	156	173	
Household Growth									
no growth*	n/a	49	66	192	63	103	175	194	
2015	n/a	39	47	109	48	65	100	110	

* Without growth some operating and capital costs may not be required.

n/a = not applicable

Source: Future Urban Research

5.5 REGION OF PEEL

Each of the system alternatives for Peel Region have been described in the GTA 3Rs EA Input document prepared by M.M. Dillon Limited, Consulting Engineers and Planners and are also presented in schedule G appended to this report. There are, however, specific cost and revenue elements associated with each of the diversion alternatives. From a financial perspective, each system can be summarized as follows:

- a) **Existing System:** This system includes the facilities and programs/services presented in the existing descriptions, plus any capital costs required as a result of keeping pace with existing service levels.

Based on information provided by RIS, capital costs required to provide the facilities/programs to maintain existing service levels are as follows:

- \$12,100,000 for a new MRF (59,000 tonnes/year)
- \$1,044,000 to distribute 17,400 backyard composters

- b) **Existing/Committed System:** In total, Peel Region is expected to incur \$43.5 million in capital expenditures including:

- \$12,300,000 for a new MRF
- \$1,090,000 to distribute 18,120 backyard composters
- \$29,000,000 for 7 new Community Recycling Centres
- \$400,000 for mini recycling depots
- \$720,000 to distribute 12,000 backyard composters

- c) **Direct Cost:** This system would charge for the amount of waste placed curbside. This suggests that Peel Region would have two options for charging for waste collection. Under a tax neutral approach, no additional revenue would be charged for waste and diversion collection purposes from the home owners beyond what is now collected via municipal taxes. That is, added direct cost revenue would be netted from collection costs before household tax rates are determined.

Under an added tax direct cost system, garbage bag charges would be levied in addition to normal property taxes that include waste diversion and disposal collection costs. The extra revenue, while representing an added charge to the homeowner, would then be available to the Region to assist in financing other diversion and waste management activities. This analysis assumed that the added charges would yield approximately \$23.3 million per year to Peel Region. This cost to the household approaches \$100.

- \$15,800,000 for a new MRF (93,000 tonnes/year)
 - \$720,000 to distribute 12,000 backyard composters
 - \$29,000,000 for 7 new Community Recycling Centres
 - \$5,545,000 to distribute 92,400 backyard composters
 - \$400,000 for mini recycling depots
- d) **Expanded Blue Box:** Includes an additional cost of \$53.3 million for following:
- \$17,700,000 for a new MRF (111,200 tonnes/year)
 - \$720,000 to distribute 12,000 backyard composters
 - \$29,000,000 for 7 new Community Recycling Centres
 - \$5,545,000 to distribute 92,400 backyard composters
 - \$400,000 for mini recycling depots
- e) **Wet/Dry:** This system would include capital costs including:
- \$22,400,000 to provide roll-out carts to 224,220 households
 - \$32,200,000 for a central composting plant (118,000 t/year)
 - \$17,700,000 for a new MRF
 - \$720,000 to distribute 12,000 backyard composters
 - \$29,000,000 for 7 new Community Recycling Centres
 - \$5,545,000 to distribute 92,400 backyard composters
 - \$400,000 for mini recycling depots
- f) **Mixed Waste:** This system would require \$131.6 million in capital expenditures including:
- \$12,300,000 for a new MRF
 - \$720,000 to distribute 12,000 backyard composters
 - \$29,000,000 for 7 new Community Recycling Centres
 - \$5,545,000 to distribute 92,400 backyard composters
 - \$107,000,000 for a mixed waste processing and composting plant (360,000 tonnes/year)
 - \$400,000 for mini recycling depots

5.5.1 Potential Impact on Local Taxpayers

The following describes the system net effects on the local taxpayers. Table 5.5.1 indicates that, when all elements are considered, gross costs in Peel Region may range from the existing level of \$9.5 million per year to \$72.8 million per year for the mixed waste A system. Further, while the existing/committed expansion program may present a gross annual operating cost of \$17.4 million per year, the direct cost/tax neutral system may approach \$24.0 million per year, with a direct cost/added tax system approaching \$47.3 million in annual levy costs.

The household cost of diversion may also be compared to the level of municipal taxation paid in Peel Region. In 1992, diversion activities represented \$20.00 per household, or 1.5% of total municipal taxes of \$1,337.00 per household per year (excluding school taxes). To estimate the future effects of an increasing tax base on the diversion alternatives the analysis included household growth estimates for Peel. (Table 5.5.2)

Table 5.5.1

**Peel Region
Cost of Alternative Diversion Systems
Net Annual Diversion Costs -- General Levy**

Residential System	Gross Costs	
Existing System	\$9,508,916	
Existing/Committed Program	17,454,659	
Direct Cost/Tax Neutral A	24,055,153	
Direct Cost/Added Tax B	47,355,153	
Expanded Blue Box	25,757,175	
Wet/Dry	31,904,990	
Mixed Waste/Low Quality Compost A	65,491,412	
Mixed Waste/High Quality Compost B	72,801,398	

Source: Future Urban Research

Household costs range between \$25.00 and \$152.00 for the various alternatives. The existing/committed system (\$41.00) represents from 4% to 6% of household taxes and has a medium effect on taxation. Further, the direct cost, expanded blue box, wet/dry and the mixed waste systems represent a share of above 7% of current average household taxes and therefore have the highest effect.

To estimate the effect of each system, a share of taxation guideline was utilized. For example, if taxation specifically related to diversion ranged from 0% to 3% of household taxes it was considered to have a low effect, while a share of 4% to 6% was considered to have a medium effect, and a share above 7% was considered to be high. It should be noted that a percentage increase in the share of taxes related directly to an increase in taxes.

The existing system ranked highest followed by the existing/committed as second highest. All other systems ranked lowest.

Table 5.5.2

Peel Region
Percent of Diversion Costs to
Household Municipal Taxes

Residential System	Current Total Municipal Taxation Per Household	Cost of Diversion Per Household	Share of Taxation
Existing System	\$1,337.00	\$25.00	2%
Existing/Committed	1,337.00	41.00	6%
Direct Cost/Tax Neutral A	1,337.00	54.00	8%
Direct Cost/Added Tax) B	1,337.00	129.00	14%
Expanded Blue Box	1,337.00	57.00	8%
Wet/Dry	1,337.00	70.00	10%
Mixed Waste/Low Quality Compost A	1,337.00	137.00	18%
Mixed Waste/High Quality Compost B	1,337.00	152.00	20%

Source: Future Urban Research

5.5.2 Potential Impact on the Debt Burden of the Municipalities

This analysis assumed that the full capital cost of future diversion commitments would be annualized at 9% for a 10 year period. The effect of increasing the existing debt position in Peel Region due on each alternative is shown on Table 5.5.3.

All of the alternative systems significantly affect Peel Region's associated debt burden. Relatively the existing/committed program, the direct cost and expanded blue box systems have lower capital requirements and therefore Peel's debt burden is affected the least at increases between 30 and 36% in these alternatives. Further, since the existing system requires additional debt only to provide existing service levels it is the lowest capital cost system and highest ranked. The mixed waste systems represent the highest capital costs and are the lowest ranked systems.

Table 5.5.3

**Peel Region
Capital Costs Related to
the Diversion Alternatives**

Residential System	Total Existing Debt (\$000)	Total Diversion Debt (\$000)	Percent Increase
Existing System (1992)	\$146,408	\$13,144	9%
Existing/Committed	146,408	43,510	30%
Direct Cost/Tax Neutral A	146,408	51,465	35%
Direct Cost/Added Tax) B	146,408	51,465	35%
Expanded Blue Box	146,408	53,365	36%
Wet/Dry	146,408	107,965	74%
Mixed Waste/Low Quality Compost A	146,408	151,965	106%
Mixed Waste/High Quality Compost B	146,408	154,965	106%

Source: Future Urban Research

An examination of Peel Region's existing debt charge position, that is, the comparison of debt payments (including principal and interest) to operating expenditures, debt charges represented 4.3% of costs. The future diversion alternatives have the effect of changing these ratios for all systems. With the existing/committed, as well as for the direct cost and expanded blue box systems, the ratio of debt charges to expenditures may increase to between 5.1 and 5.2%. With the wet/dry and mixed waste systems, debt charges may increase to 6.2 and 7.0% respectively. This is shown in Table 5.5.4.

Table 5.5.4

**Peel Region
Effect of Diversion Costs on
Municipal Debt Charges**

Residential System	Existing Debt Charges as a Percent of Expenditures	Future Debt Charges as a Percent of Expenditures
Existing System (1992)	4.3%	4.5%
Existing/Committed	4.3%	5.1%
Direct Cost/Tax Neutral A	4.3%	5.2%
Direct Cost/Added Tax B	4.3%	5.2%
Expanded Blue Box	4.3%	5.2%
Wet/Dry	4.3%	6.2%
Mixed Waste/Low Quality Compost A	4.3%	7.0%
Mixed Waste/High Quality Compost B	4.3%	7.0%

Source: Future Urban Research

Debt capacity calculations (the ratio of debt charges to operating expenditures) determine the amount of available debt permitted by the Ministry of Municipal Affairs (former OMB guideline). When estimating debt capacity, using a 9% interest rate and a 10 year term, the total debt capacity for Peel Region approaches \$687.1 million (Table 5.5.5). The mixed waste systems absorb the largest amount of debt capacity, leaving Peel with 56% of its debt capacity. The wet/dry leaves Peel with 63% of its debt capacity while the direct cost and expanded blue box leave 71% of capacity.

On an overall basis, when all of the debt factors are taken together, the existing system represents the highest ranked system as it carries the least cost in terms of capital. On the other hand, the mixed waste systems are the lowest ranked systems since they incur the highest capital costs. All other systems are ranked in between these systems because they carry high capital costs but affect Peel's financing to a lesser extent.

Table 5.5.5

**Peel Region
Effect of Diversion Costs
on Debt Capacity**

Residential System	Total Available Debt Capacity (\$000)	Current Remaining Debt Capacity (\$000)	Total Diversion Debt (\$000)	Percent Capacity Remaining
Existing System (1992)	\$687,125	\$540,717	\$13,144	77%
Existing/Committed	687,125	540,717	43,510	72%
Direct Cost/Tax Neutral A	687,125	540,717	51,465	71%
Direct Cost/Added Tax B	687,125	540,717	51,465	71%
Expanded Blue Box	687,125	540,717	53,365	71%
Wet/Dry	687,125	540,717	107,965	63%
Mixed Waste/Low Quality Compost A	687,125	540,717	154,965	56%
Mixed Waste/High Quality Compost B	687,125	540,717	154,965	56%

Source: Future Urban Research

5.5.3 Potential Impact on Municipal Reserve Funds

It was shown under the system descriptions that the direct cost/added tax system had the capacity of generating a \$23.3 million in extra revenue that could be placed into reserves and used for other waste management/waste diversion activities. The cost to the household would approximate \$75.34. Further, the \$23.3 million in additional taxation represents approximately 94% of annual operating expenditures.

As a result of this, the direct cost/added tax system is the highest ranked since it adds to the

Region's reserve fund position. Conversely, all other systems are the lowest ranked systems because they do not impact the reserve fund.

5.5.4 Potential Impact on the Level of Municipal Services

To estimate the effect of each system, the relative level of annual diversion costs was compared to total operating expenditures. In this way, decreases in the level of service resulting from cost increases due to diversion can be captured. Cost increases that ranged from 0% to 3% of expenditures were considered to have a low effect. Cost increases of 4% to 6% were considered to have a medium effect and cost increases above 7% were considered to be high.

Table 5.5.6 indicates that the existing, existing/committed, direct cost and expanded blue box systems would all have a low effect on municipal service levels. Conversely, the mixed waste systems would have a high effect on municipal service levels. As a result of its operating costs, the wet/dry system would have a medium effect on municipal service levels. However, it should be noted that Peel Region has the discretion to use reserve funds to offset the impact of any of the alternatives put forth to soften the effects of any of the alternatives. Table 5.5.6 presents the effects on the level of municipal services.

As a result, the existing and existing/committed systems ranked highest. The direct cost and expanded blue box systems ranked second highest, followed by the wet/dry system. The mixed waste systems ranked lowest.

5.5.5 Potential Impact on the Provincial Treasury

Pending funding arrangements with Peel Region, one third of the capital costs of the alternative systems may be funded externally. While the primary source of funds may be Provincial grants, the assumption does not exclude the possibility of other private funding sources. If this were the case, the alternative systems in Peel may be funded as follows:

Existing	\$3.9 million
Existing/Committed	13.0 million
Direct Cost	15.4 million
Expanded Blue Box	16.0 million
Wet/Dry	32.4 million
Mixed Waste	46.4 million

Table 5.5.6

**Peel Region
Operating Costs Related to
the Diversion Alternatives**

Residential System	Total Existing Expenditures (\$000)	Added Diversion Expenditures (\$000)	Percent Increase
Existing System (1992)	\$883,273	\$9,508	1%
Existing/Committed	883,273	17,454	2%
Direct Cost/Tax Neutral A	883,273	24,055	3%
Direct Cost/Added Tax) B	883,273	24,055	3%
Expanded Blue Box	883,273	25,757	3%
Wet/Dry	883,273	31,904	4%
Mixed Waste/Low Quality Compost A	883,273	65,491	7%
Mixed Waste/High Quality Compost B	883,273	72,801	8%

Source: Future Urban Research

5.5.6 Potential Impact on Private Sector Industries

Table 5.5.7 shows the level of private sector taxation in Peel for each diversion system. While taxes currently collected from the business sector now approach \$149 million. Tax charges for each system range from 2% for the existing; 3% for existing/committed; 5% for both direct cost systems (added revenue bag charges are only residually related) and expanded blue box; 6% for the wet/dry; 13% for mixed waste A and 14% for the mixed waste B system. It should be noted that a percentage increase in the share of taxes relates directly to an increase in taxes.

As a result, the existing and the existing/committed systems are the highest ranked. The direct cost, wet/dry and expanded blue box systems are the second highest ranked. The mixed waste systems are lowest ranked.

Table 5.5.7

**Peel Region
System Effects on Business Taxes**

Residential System	Total Existing Business Taxes (\$000)	Total Added Taxes Due To Diversion (\$000)	Share of Taxation
Existing System	\$149,449	\$3,613	2%
Existing/Committed	149,449	6,633	3%
Direct Cost/Tax Neutral A	149,449	9,141	5%
Direct Cost/Added Tax B	149,449	9,141	5%
Expanded Blue Box	149,449	9,788	5%
Wet/Dry	149,449	12,124	6%
Mixed Waste/Low Quality Compost A	149,449	24,887	13%
Mixed Waste/High Quality Compost B	149,449	27,665	14%

Source: Future Urban Research

5.5.7 Summary of Effects Analysis

The following summarizes the above effects by criteria and indicator for Peel Region and this is shown on Table 5.5.8.

The existing system is highest ranked. The existing system represents the least cost to the tax payers in Peel and does not present significant debt costs to the financial structure. The existing/committed system is the second highest ranked system as it has a medium effect on taxes and does not present significant debt costs to the financial structure. The direct cost/tax neutral and expanded blue box have similar tax effects and both ranked third highest. The direct cost/added tax system imposes an additional cost to the tax payers which is unrelated to service

received. This revenue, however, represents an addition to Peel Region's reserves, which are then available to assist in further waste management financing for other projects. As such, these added funds would be returned to Peel's tax payers in the future. Since these added charges, however, are collected as a fee for waste management, it is suggested that the funds be used only for waste management purposes and not to decrease general levy requirements for other municipal services. It is for this reason that the direct cost/added tax system ranked below the direct cost/tax neutral system as third lowest.

The mixed waste system is the lowest ranked because it represents the highest tax effects and also the highest capital cost. Similarly, while less burdensome in terms of the tax effect, the wet/dry system represents the second lowest ranked system.

5.5.8 Sensitivity Analysis

To confirm this ranking, the municipal finance component also undertook a sensitivity analysis on the key variables that may affect the criteria and indicators. The sensitivity analysis examined variations in capital costs, variations in operating cost, and household growth including a no growth scenario. While changing the value of the indicators shown above, the sensitivity analysis shows that, given the ranges tested, the general ranking of the systems shown above would not significantly change.

TABLE 5.5.8
PEEL REGION
NET EFFECTS SUMMARY FOR MUNICIPAL FINANCE

Goal/Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3A Direct Cost (tax neutral)	System 3B Direct Cost (added tax)	System 4 Expanded Blue Box	System 5 Wet/Dry	System 6A Mixed Waste (low quality compost)	System 6B Mixed Waste (high quality compost)
Municipal Finance (Overall Ranking)	Highest ranked	Second highest ranked	Third Highest ranked	Third Lowest ranked	Third Highest ranked	Second Lowest ranked	Lowest ranked	Lowest ranked
Impact on Local Taxpayers	Highest ranked due to:	Second Highest ranked due to:	Lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:
• Tax levy (\$)	9,508,916	17,454,659	24,055,153	47,355,153	25,757,175	31,904,990	65,491,412	72,801,398
• Tax per household (\$)	25	41	54	129	57	70	137	152
• Share of taxation (%)	2%	6%	8%	14%	8%	10%	18%	20%
Impact on Municipal Debt Burden	Highest ranked due to:	Second highest ranked due to:	Third highest ranked due to:	Third highest ranked due to:	Third highest ranked due to:	Second Lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:
• Amount of debt (\$)	13,144,000	43,510,000	51,465,000	51,465,000	53,365,000	107,965,000	154,965,000	154,965,000
• Debt payments (\$)	2,048,000	6,780,000	8,019,000	8,315,000	8,315,000	16,823,000	24,147,000	24,147,000
• Debt capacity (%)	77%	72%	71%	71%	71%	63%	56%	56%
Impact on Municipal Reserves	Lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:	Highest ranked due to:	Lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:
• Total reserves (\$)	0	0	0	23,300,000	0	0	0	0
• Reserves/ household(\$)	0	0	0	75.34	0	0	0	0
• Reserves/expenses (%)	92%	92%	92%	94%	92%	92%	92%	92%
Impact on Municipal Level of Service	Highest ranked due to:	Highest ranked due to:	Second highest ranked due to:	Second highest ranked due to:	Second highest ranked due to:	Second lowest ranked due to:	Lowest ranked due to:	Lowest ranked due to:
• Operating cost (\$)	9,508,916	17,454,659	24,055,153	24,055,153	25,757,175	31,904,990	65,491,412	72,801,398
• Percent Increase (%)	1%	2%	3%	3%	3%	4%	7%	8%
Impact on Private Sector Industries	Highest ranked due to:	Highest ranked due to:	Second highest ranked due to:	Second highest ranked due to:	Second highest ranked due to:	Second highest ranked due to:	Lowest ranked due to:	Lowest ranked due to:
• Private funding (\$)	n/c	n/c	n/c	n/c	n/c	n/c	n/c	n/c
• Costs (\$)	n/c	n/c	n/c	n/c	n/c	n/c	n/c	n/c
• Higher prices (\$)	n/c	n/c	n/c	n/c	n/c	n/c	n/c	n/c
• Share of Private taxes (%)	2%	3%	5%	5%	5%	6%	13%	14%
n/c -- no effect on residential systems								

Table 5.5.9

SENSITIVITY ANALYSIS
PEEL

	Existing	Committed	Direct Cost A	Direct Cost B	Expanded	Wet/Dry	Mixed a	Mixed b	
Household Costs		25	41	54	129	57	70	137	152
Capital Costs									
10%	n/a	43	57	132	60	76	145	160	
20%	n/a	46	60	135	63	81	154	168	
-10%	n/a	38	51	127	55	64	129	144	
Grant									
10%	n/a	39	51	126	54	67	130	144	
20%	n/a	37	48	124	51	64	123	135	
30%	n/a	35	45	121	48	61	116	127	
Operating Cost									
10%	n/a	43	57	132	61	73	144	160	
20%	n/a	45	60	135	64	75	151	168	
-10%	n/a	47	63	138	67	78	158	176	
Household Growth									
no growth*	n/a	46	63	161	67	84	171	191	
2015	n/a	37	47	102	49	58	108	119	

* Without growth some operating and capital costs may not be required.

n/a = not applicable

Source: Future Urban Research

6.0 RESIDENTIAL SYSTEM EFFECTS SUMMARY

Tables 6.1 and 6.2 summarize the ranking process for all Regions. Table 6.1 indicates each Region's effects analysis according to the ranking. Table 6.2 compares selected criteria and indicators for each diversion system. The overall results of the net effects analysis shows a consistency among the Regions with respect to the existing and mixed waste systems. In all Regions, the existing system ranked the highest, while the mixed waste system ranked lowest. In terms of the Municipal Finance criteria: taxation, debt, municipal service, business sector tax and reserves, the existing system had a low effect in all the Regions. Conversely, after employing the same criteria, the mixed waste system had a high effect in all Regions. Relative to the other alternative systems, the mixed waste system carries with it high capital and operating costs and, therefore, has a high (harmful) effect on the criteria and indicators. The existing system has the lowest capital and operating costs in all of the Regions and has a low effect on the criteria and indicators.

The existing/committed, direct cost, expanded blue box and wet/dry systems also ranked consistently in all Regions except Metro Toronto. The existing/committed ranked second highest, direct cost A and expanded blue box systems ranked third highest. The direct cost B system ranked third lowest and the wet/dry system ranked second lowest consistently in all Regions except Metro.

In Metro, all of the systems other than the direct cost B and mixed waste systems ranked highest. The direct cost B system ranked second highest, while the mixed waste system ranked lowest. The primary reason for ranking most of the systems in Metro as highest relates directly to the magnitude of normal capital and operating costs. For example, the wet/dry system carries with it \$63.4 million in operating expenditures and \$141.7 million in capital costs. While these appear to be large, they do not have a high effect on tax, debt or reserve funds in Metro because of its substantially larger financial structure -- existing operating costs, \$5.3 billion and existing debt \$1.1 billion. The other factor that influences the overall ranking in Metro is the ratio of residential to commercial/business assessment. In Metro, the private sector represents 45 percent of total assessment, with the residential sector representing the balance. This high rate of commercial/business assessment (and the higher tax rates paid by the private sector) has the effect of softening cost increases on the residential sector.

While table 6.1 compares the overall ranking of each system in each Region, Table 6.2 quantifies the criteria and indicators for each of the alternative systems in each of the GTA Regions. Although there is a consistency amongst the rankings, the analysis yields different results for each of the criteria and indicators. These differences arise due to the specific characteristics of both the alternatives themselves and to the specific characteristics of the Regions. As a result, there are several reasons why an alternative system may have different effects in each of the GTA

Regions. To further explain the differences amongst the indicators, each effect should be considered in light of the following:

- * the capital cost required to undertake a system;
- * the operating cost required both from a collection and processing point of view;
- * the amount of additional reserves that a system may generate;
- * the amount of additional reserves that a system may use up;
- * the size of the tax base;
- * the growth of the tax base;
- * the composition of the tax base (residential vs commercial);
- * the number of households within the Region;
- * the growth in population and households over the study period;
- * the number of households receiving curbside service;
- * the existing financial structure of each of the Regions and local municipalities in terms of operating costs, debt carrying ability, existing reserves, existing levels of grants, and other non-tax revenue sources.

Due to the number of factors that may influence the effects that a system may have it is suggested that prior to a Region undertaking a specific 3Rs alternative, a detailed and localized financial effects analysis be completed to confirm these results.

Table 6-1
Summary of Residential 3Rs Sytem Rankings by Region
Municipal Finance

Region	System 1 Existing	System 2 Existing /Commited	System 3A Direct Cost A	System 3B Direct Cost B	System 4 Expanded Blue Box	System 5 Wet/Dry	System 6A Mixed Waste (Low Quality Compost)	System 6B Mixed Waste (High Quality Compost)
Durham	Highest ranked	Second Highest ranked	Third Highest ranked	Third Lowest ranked	Third Highest ranked	Second Lowest Ranked	Lowest Ranked	Lowest Ranked
Metro	Highest ranked	Highest ranked	Highest ranked	Second Lowest Ranked	Highest ranked	Highest ranked	Lowest Ranked	Lowest Ranked
York	Highest ranked	Second Highest ranked	Third Highest ranked	Third Lowest ranked	Third Highest ranked	Second Lowest Ranked	Lowest Ranked	Lowest Ranked
Peel	Highest ranked	Second Highest ranked	Third Highest ranked	Third Lowest ranked	Third Highest ranked	Second Lowest Ranked	Lowest Ranked	Lowest Ranked

Table 6.2

REGIONAL SYSTEM NET EFFECTS BY SELECTED INDICATORS

System (in 2000)	Durham	Metro	York	Peel
Existing				
Tax Per Household	2%	2%	2%	2%
Amount of Debt	9,697,000	7,090,000	11,733,000	13,144,000
Reserves	0	0	0	0
Level of Service	1%	1%	1%	1%
Private Sector Taxes	3%	2%	3%	2%
Existing/Committed				
Tax Per Household	4%	2%	4%	6%
Amount of Debt	13,858,000	16,025,000	14,853,000	43,510,000
Reserves	0	0	0	0
Level of Service	2%	1%	2%	2%
Private Sector Taxes	6%	2%	4%	3%
Direct Cost A				
Tax Per Household	4%	2%	5%	8%
Amount of Debt	20,436,000	37,866,000	24,090,000	51,465,000
Reserves	0	0	0	0
Level of Service	3%	1%	3%	3%
Private Sector Taxes	7%	3%	6%	5%
Direct Cost B				
Tax Per Household	10%	6%	12%	14%
Amount of Debt	20,436,000	37,866,000	24,090,000	51,465,000
Reserves	16,200,000	51,000,000	20,400,000	23,300,000
Level of Service	3%	1%	3%	3%
Private Sector Taxes	7%	3%	6%	5%
Expanded Blue Box				
Tax Per Household	5%	3%	5%	8%
Amount of Debt	21,635,000	42,666,000	25,290,000	53,365,000
Reserves	0	0	0	0
Level of Service	3%	1%	3%	3%
Private Sector Taxes	8%	3%	6%	5%
Source: Future Urban Research				

Table 6.2

REGIONAL SYSTEM NET EFFECTS BY SELECTED INDICATORS

System (in 2000)		Durham	Metro	York	Peel
Wet/Dry					
	Tax Per Household	6%	3%	7%	10%
	Amount of Debt	60,186,000	141,746,000	73,606,000	107,965,000
	Reserves	0	0	0	0
	Level of Service	4%	1%	4%	4%
	Private Sector Taxes	9%	3%	9%	6%
Mixed Waste a					
	Tax Per Household	9.0%	7.0%	11.0%	18.0%
	Amount of Debt	88,336,000	279,866,000	106,690,000	154,965,000
	Reserves	0	0	0	0
	Level of Service	6%	3%	7%	7%
	Private Sector Taxes	15%	8%	16%	13%
Mixed Waste b					
	Tax Per Household	9.0%	8.0%	12.0%	20.0%
	Amount of Debt	88,336,000	279,866,000	106,690,000	154,965,000
	Reserves	0	0	0	0
	Level of Service	6%	3%	8%	8%
	Private Sector Taxes	16%	9%	17%	14%
Source: Future Urban Research					

SCHEDULE A

Detailed Municipal Finance Profiles

REGION OF DURHAM

MUNICIPAL FINANCE ASSESSMENT - REGION OF DURHAM

(\$000's except demographics)

											% of
	RMD	Oshawa	Ajax	Clarington	Pickering	Whitby	Brock	Scugog	Uxbridge	Total	Total
HOUSEHOLDS (1992)*	140,832	48,570	18,711	16,947	21,225	20,258	4,056	6,171	4,894	140,832	
		34.49%	13.29%	12.03%	15.07%	14.38%	2.88%	4.38%	3.48%	100.00%	
EQUALIZED TAXABLE ASSESSMENT											
Residential		4,472,626	3,064,936	2,543,891	4,085,884	3,206,848	660,635	1,142,838	1,025,045	20,202,703	
Commercial/Industrial/Business		1,215,860	307,763	151,048	413,124	990,625	83,920	141,892	143,929	3,448,162	
TOTAL		5,688,486	3,372,699	2,694,940	4,499,008	4,197,473	744,555	1,284,730	1,168,973	23,650,865	
Residential Portion Percentage		78.6%	90.9%	94.4%	90.8%	76.4%	88.7%	89.0%	87.7%	85.4%	
Commercial/Other Portion Percentage		21.4%	9.1%	5.6%	9.2%	23.6%	11.3%	11.0%	12.3%	14.6%	
TOTAL		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
RESIDENTIAL ASSESSMENT PER HOUSEHOLD											
		7,946	25,506	3,556	28,262	6,027	9,286	4,253	4,854	24,484	
RESIDENTIAL MILL RATES											
Local (Oshawa excludes merged area)		113.00	26.67	137.56	17.51	94.80	65.30	118.52	122.71	N/A	
Regional		73.32	19.56	124.98	20.80	94.50	53.95	115.32	124.69	N/A	
Schools		213.22	54.05	401.00	58.79	242.20	135.05	353.19	360.60	N/A	
TOTAL		399.54	100.28	663.54	97.10	431.50	254.30	587.03	608.00	N/A	
AVERAGE TAX PER HOUSEHOLD											
Local		897.90	680.25	489.15	494.87	571.36	606.38	504.07	595.63	675.93	
Regional		582.60	498.89	444.50	587.84	569.57	500.98	490.49	605.29	548.18	
Schools		1,694.25	1,378.59	1,426.15	1,661.50	1,459.78	1,254.07	1,502.23	1,750.47	1,562.25	
Other Direct Charges		304.56	352.00	365.64	351.78	295.93	343.69	344.57	339.66	328.19	
TOTAL		3,479.30	2,909.73	2,725.44	3,095.99	2,896.64	2,705.12	2,841.35	3,291.05	3,114.54	
REVENUE											
Municipal Property Taxation											
Residential & Farm		44,881	21,840	18,223	23,631	24,725	4,564	6,476	5,937	150,275	31.4
Commercial, Industrial & Business		36,753	7,086	4,273	8,467	9,614	803	1,158	1,083	69,236	14.5
Other Direct Charges		0	0	0	0	0	0	0	0	0	0.0
TOTAL		81,634	28,925	22,495	32,098	34,338	5,367	7,634	7,020	219,512	45.8
School Taxes		84,233	33,108	29,599	45,688	40,695	5,823	10,512	9,944	259,601	54.2
TOTAL		165,867	62,033	52,094	77,786	75,033	11,190	18,146	16,964	479,113	100.0
TAX											
Levy - Local		49,612	16,906	12,591	15,030	18,439	2,975	3,900	3,582	123,036	25.7
- Regional		32,021	12,019	9,905	17,068	15,899	2,392	3,734	3,438	96,476	20.1
- School Board		84,233	33,108	29,599	45,688	40,695	5,823	10,512	9,944	259,601	54.2
TOTAL		165,866	62,033	52,094	77,786	75,033	11,190	18,146	16,964	479,113	100.0

MUNICIPAL FINANCE ASSESSMENT - REGION OF DURHAM
(\$000's except demographics)

	RMD	Oshawa	Ajax	Newcastle	Pickering	Whitby	Brock	Scugog	Uxbridge	Total	% of Total
LOCAL REVENUE											
Property Taxation (Local)	96,476	49,612	16,906	12,591	15,030	18,439	2,975	3,900	3,582	219,512	38.3
Unconditional Grants	18,813	5,148	840	839	1,113	1,064	327	322	241	28,707	5.0
Conditional Grants	126,557	5,122	1,436	1,698	2,547	2,095	711	955	746	141,866	24.8
Payments in Lieu of Taxes	0	2,216	327	1,677	5,658	1,576	106	120	173	11,852	2.1
Fees & Service Charges	32,275	10,092	2,759	3,415	5,335	3,486	411	559	692	59,025	10.3
Program Revenues	81,043	13,107	3,084	1,825	4,796	5,464	569	566	1,093	111,548	19.5
TOTAL	355,164	85,297	25,353	22,044	34,480	32,124	5,099	6,422	6,527	572,510	100.0
OPERATING EXPENDITURES											
General Government	10,058	10,600	4,127	5,001	6,188	4,348	929	1,126	1,627	44,004	7.7
Protection	55,178	14,580	5,208	2,718	7,666	6,655	683	714	634	94,036	16.5
Transportation	17,684	32,528	6,478	6,529	7,816	9,275	1,740	2,668	2,066	86,784	15.2
Environmental - Sewer	54,494	872	44	42	42	190	0	0	0	55,685	9.7
- Water	36,061	0	0	0	73	0	0	8	0	36,142	6.3
- Solid Waste	13,124	2,676	974	1,727	847	1,337	129	324	197	21,335	3.7
Health & Social Services	164,257	1,727	60	138	224	334	87	52	0	166,879	29.2
Recreation	0	18,620	7,614	4,484	10,320	8,522	1,061	1,134	1,524	53,279	9.3
Planning	3,868	3,732	1,213	1,539	1,124	1,261	268	139	80	13,226	2.3
TOTAL	354,724	85,336	25,717	22,179	34,302	31,922	4,897	6,165	6,128	571,369	100.0
CAPITAL FUND REVENUES											
Revenue Fund	39,845	3,480	1,343	1,153	2,151	677	768	778	1,121	51,317	31.5
Reserves & Reserve Funds	8,767	7,012	1,708	2,581	4,688	7,367	4	211	642	32,980	20.3
Long Term Borrowing	32,750	7,432	6,000	0	2,300	374	393	0	0	49,249	30.3
Ontario Grants	13,335	3,824	1,276	1,349	1,770	1,682	563	332	821	24,952	15.3
Other Sources	982	1,309	1,142	42	20	141	0	121	410	4,167	2.6
TOTAL	95,679	23,058	11,469	5,126	10,929	10,241	1,728	1,442	2,994	162,665	100.0
CAPITAL FUND EXPENDITURES											
General Government	330	560	1,045	229	253	31	70	16	143	2,678	2.5
Protection	3,445	534	156	51	137	921	51	57	152	5,504	5.2
Transportation	21,424	7,348	2,349	3,584	2,393	7,121	911	917	1,263	47,310	44.6
Environmental - Sewer	11,453	3,004	0	0	50	426	0	0	0	14,933	14.1
- Water	19,063	628	0	0	0	0	0	0	0	19,691	18.6
- Solid Waste	421	319	0	4	0	110	0	0	0	854	0.8
Health & Social Services	653	663	0	18	2	122	511	8	0	1,977	1.9
Recreation	0	3,197	1,386	1,014	2,492	1,344	111	397	1,141	11,081	10.5
Planning	32	1,325	34	191	22	201	186	14	8	2,014	1.9
TOTAL	56,821	17,578	4,969	5,092	5,349	10,276	1,840	1,409	2,707	106,042	100.0
LONG-TERM DEBT OUTSTANDING											
DEBT CHARGES	11,878	18,051	15,670	5,987	7,504	11,807	775	220	32	71,924	
RESERVES/RESERVE FUNDS	4,851	6,001	500	854	241	625	121	37	27	13,257	
	113,522	33,153	15,882	22,471	14,660	16,880	1,847	2,064	1,521	222,000	

N/A - Not Applicable

* Source - Hardy Stevenson and Associates, "GTA 3Rs Analysis, Social Impact Technical Appendix", 1994b

** Local Revenue excludes direct charges

Source - Ministry of Municipal Affairs - MARS FIR's 1992

METROPOLITAN TORONTO

MUNICIPAL FINANCE ASSESSMENT - METROPOLITAN TORONTO

(\$000's except demographics)

	Metro	Toronto	Etobicoke	Scarborough	North York	York	East York	Total	% of Total
HOUSEHOLDS (1992)*	875,021	273,936	116,625	177,033	205,604	56,809	45,014	875,021	
		31.31%	13.33%	20.23%	23.50%	6.49%	5.14%	100.0%	
EQUALIZED TAXABLE ASSESSMENT									
Residential		38,087,752	16,527,561	22,884,183	30,902,569	6,314,103	5,284,324	120,000,492	
Commercial/Industrial/Business		48,453,372	13,083,259	13,050,649	20,141,111	2,040,923	1,814,889	98,584,204	
TOTAL		86,541,124	29,610,820	35,934,832	51,043,681	8,355,026	7,099,214	218,584,696	
Residential Portion Percentage		44.0%	55.8%	63.7%	60.5%	75.6%	74.4%	54.9%	
Commercial/Other Portion Percentage		56.0%	44.2%	36.3%	39.5%	24.4%	25.6%	45.1%	
TOTAL		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
RESIDENTIAL ASSESSMENT PER HOUSEHOLD		6,135	6,469	5,443	6,572	4,387	4,836	137,140	
RESIDENTIAL MILL RATES									
Local		84.11	67.21	83.76	70.06	119.84	98.36	N/A	
Regional		117.77	111.67	110.81	112.46	109.69	110.62	N/A	
Schools		239.96	235.93	237.20	235.98	235.53	237.20	N/A	
TOTAL		441.84	414.81	431.77	418.50	465.06	446.18	N/A	
AVERAGE TAX PER HOUSEHOLD									
Local		516.01	434.78	455.91	460.43	525.74	475.67	478.52	
Regional		722.52	722.39	603.14	739.09	481.21	534.96	676.93	
Schools		1,472.15	1,526.23	1,291.08	1,550.86	1,033.27	1,147.10	1,416.01	
Other Direct Charges		171.69	221.47	199.15	213.00	222.29	214.75	199.09	
TOTAL		2,882.37	2,904.87	2,549.27	2,963.38	2,262.51	2,372.48	2,770.54	
REVENUE									
Municipal Property Taxation									
Residential & Farm		317,662	133,615	183,662	245,050	56,432	45,358	981,779	21.1
Commercial, Industrial & Business		553,316	129,619	135,796	199,489	23,333	20,060	1,061,613	22.8
Other Special Charges		36,834	14,689	14,473	27,032	6,458	5,542	105,028	2.3
TOTAL		907,812	277,923	333,931	471,571	86,223	70,960	2,148,420	46.2
School Taxes		1,038,099	347,691	388,858	575,458	81,938	73,208	2,505,252	53.8
TOTAL		1,945,911	625,614	722,789	1,047,029	168,161	144,168	4,653,672	100.0
TAX									
Levy - Local		369,409	99,180	138,196	171,317	41,730	31,323	851,155	18.7
- Regional		501,569	164,054	181,263	273,222	38,034	34,094	1,192,236	26.2
- School Board		1,038,099	347,691	388,858	575,458	81,938	73,208	2,505,252	55.1
Total Tax Levy		1,909,077	610,925	708,317	1,019,997	161,702	138,625	4,548,643	100.0

MUNICIPAL FINANCE ASSESSMENT - METROPOLITAN TORONTO

(\$000's except demographics)

LOCAL REVENUE**

	Metro	Toronto	Etobicoke	Scarborough	North York	York	East York	Total	% of Total
Property Taxation (Local)	1,297,265	369,409	99,180	138,196	171,317	41,730	31,323	2,148,420	41.3
Unconditional Grants	144,510	26,462	7,112	11,606	11,995	6,350	2,982	211,017	4.1
Conditional Grants	1,285,316	29,550	9,340	16,690	16,223	4,954	5,104	1,367,177	26.3
Payments in Lieu of Taxes	0	92,326	14,829	18,897	22,752	1,726	1,601	152,131	2.9
Fees & Service Charges	239,305	80,107	21,468	27,325	41,822	6,907	4,294	421,228	8.1
Program Revenues	641,967	110,915	33,798	28,398	61,788	10,852	8,846	896,564	17.3
TOTAL	3,608,363	708,769	185,727	241,112	325,897	72,519	54,150	5,196,537	100.0

OPERATING EXPENDITURES

General Government	207,074	193,721	25,773	39,930	50,869	12,095	11,520	540,982	10.2
Protection	585,595	123,387	34,268	45,724	58,543	16,380	11,591	875,488	16.6
Transportation	853,373	89,506	28,555	40,415	47,047	13,251	6,839	1,078,986	20.4
Environmental - Sewer	143,646	19,304	8,093	6,988	11,843	3,401	1,978	195,253	3.7
- Water	92,818	24,981	16,821	14,192	22,419	3,978	988	176,197	3.3
- Solid Waste	98,785	34,593	12,139	12,303	21,998	4,475	3,571	187,864	3.6
Health & Social Services	1,538,351	45,813	9,098	13,109	17,771	5,587	5,129	1,634,858	30.9
Recreation	152,128	138,146	49,168	62,032	86,434	13,304	11,974	513,186	9.7
Planning	19,210	43,803	3,722	6,036	5,606	1,265	713	80,355	1.5
TOTAL	3,690,980	713,254	187,637	240,729	322,530	73,736	54,303	5,283,169	100.0

CAPITAL FUND REVENUES

Revenue Fund	87,911	6,908	9,052	8,198	29,385	1,239	244	142,937	20.2
Reserves & Reserve Funds	33,259	30,573	4,610	22,445	31,244	1,353	1,477	124,961	17.7
Long Term Borrowing	125,000	24,096	482	1,119	5,775	0	967	157,439	22.3
Ontario Grants	161,416	6,796	5,248	2,822	5,879	2,489	2,108	186,758	26.4
Other Sources	7,301	81,931	406	3,260	1,092	0	48	94,038	13.3
TOTAL	414,887	150,304	19,798	37,844	73,375	5,081	4,844	706,133	100.0

CAPITAL FUND EXPENDITURES

General Government	64,294	12,647	1,581	5,317	1,976	670	211	86,696	11.5
Protection	26,039	2,738	348	759	2,230	854	6	32,974	4.4
Transportation	236,006	30,172	9,378	7,033	16,703	4,040	3,167	306,499	40.7
Environmental - Sewer	71,710	5,787	4,801	9,066	4,922	1,988	876	99,150	13.2
- Water	15,605	3,081	4,725	2,147	4,868	654	249	31,329	4.2
- Solid Waste	14,669	2,010	20	570	167	0	0	17,436	2.3
Health & Social Services	25,267	79	0	35	0	54	0	25,435	3.4
Recreation	12,018	37,607	3,395	9,187	32,237	930	552	95,926	12.7
Planning	185	56,582	0	214	0	273	224	57,478	7.6
TOTAL	465,793	150,703	24,248	34,328	63,103	9,463	5,285	752,923	100.0

LONG-TERM DEBT OUTSTANDING

DEBT CHARGES	512,694	406,385	56,093	7,824	29,760	19,567	18,063	1,050,386
RESERVES/RESERVE FUNDS	141,215	43,016	12,116	4,540	9,774	13,801	5,538	230,000
	332,040	314,993	47,521	124,270	126,096	11,464	12,078	968,462

* Source: Hardy Stevenson and Associates, "GTA 3Rs Analysis: Social Impact Technical Appendix", 1994b

Source: Ministry of Municipal Affairs - MARS FIR's 1992. **Local Revenue excludes direct charges

REGION OF YORK

MUNICIPAL FINANCE ASSESSMENT - REGION OF YORK

(\$000's except demographics)

	RMY	Aurora	Markham	Newmarket	Richmond Hill	Vaughan	Whitchurch Stouffville	East Gwillimbury	Georgina	King	Total	% of Total
HOUSEHOLDS (1992)*	161,654	10,074	46,912	15,233	27,456	32,083	6,501	5,986	11,235	6,174	161,654	
		6.23%	29.02%	9.42%	16.98%	19.85%	4.02%	3.70%	6.95%	3.82%		
EQUALIZED TAXABLE ASSESSMENT												
Residential		2,205,655	11,271,932	2,644,750	6,707,884	8,869,633	1,591,275	1,263,185	1,856,006	1,857,515	38,267,835	
Commercial/Industrial/Business		237,157	4,982,083	851,427	1,928,938	5,335,704	315,877	105,594	223,564	171,663	14,152,009	
TOTAL		2,442,813	16,254,015	3,496,177	8,636,822	14,205,337	1,907,152	1,368,779	2,079,570	2,029,178	52,419,844	
Residential Portion Percentage		90.29%	69.35%	75.65%	77.67%	62.44%	83.44%	92.29%	89.25%	91.54%	73.0%	
Commercial/Other Portion Percentage		9.71%	30.65%	24.35%	22.33%	37.56%	16.56%	7.71%	10.75%	8.46%	27.0%	
TOTAL		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.0%	
RESIDENTIAL ASSESSMENT/ HOUSEHOLD		9,471	34,212	23,136	32,135	40,523	27,433	21,363	18,977	32,656	236,727	
RESIDENTIAL MILL RATES												
Local		22.87	14.56	20.40	25.70	16.18	22.02	28.07	31.97	16.30	N/A	
Regional		11.38	11.80	12.97	11.76	11.39	13.81	14.03	13.13	13.22	N/A	
Schools		61.71	66.40	72.29	66.72	63.47	75.37	81.23	76.02	77.22	N/A	
TOTAL		95.96	92.76	105.66	104.18	91.04	111.20	123.33	121.12	106.74	N/A	
AVERAGE TAX PER HOUSEHOLD												
Local		216.60	498.13	471.97	825.87	655.66	604.07	599.66	606.69	532.29	581.92	
Regional		107.78	403.70	300.07	377.91	461.56	378.85	299.72	249.17	431.71	368.08	
Schools		584.46	2,271.68	1,672.50	2,144.05	2,571.99	2,067.63	1,735.32	1,442.63	2,521.70	2,071.86	
Other Direct Charges		325.89	292.90	275.96	313.23	332.19	49.67	136.59	178.34	79.03	272.91	
TOTAL		1,234.73	3,466.41	2,720.51	3,661.05	4,021.40	3,100.22	2,771.29	2,476.83	3,564.73	3,294.77	
REVENUE												
Municipal Property Taxation												
Residential & Farm		9,798	46,781	11,350	32,457	37,374	6,535	5,212	10,108	6,716	166,331	22.2
Commercial, Industrial & Business		3,453	24,998	4,867	11,677	28,245	1,724	586	1,598	800	77,948	10.4
Other Special Charges		1,187	422	1,280	1,131	2,901	265	235	638	253	8,312	1.1
TOTAL		14,438	72,201	17,497	45,265	68,519	8,524	6,033	12,344	7,769	252,590	33.7
School Taxes		23,977	158,535	35,121	77,569	140,415	15,949	10,951	17,896	16,512	496,925	66.3
TOTAL		38,415	230,736	52,618	122,834	208,934	24,473	16,984	30,240	24,281	749,515	100.0
TAX												
Levy - Local		8,836	43,819	9,922	30,716	40,928	4,868	3,918	8,605	4,707	156,319	21.1
- Regional		4,415	27,961	6,295	13,419	24,690	3,393	1,882	3,101	2,810	87,966	11.9
- School Board		23,977	158,535	35,121	77,569	140,415	15,949	10,951	17,896	16,512	496,925	67.0
TOTAL		37,228	230,315	51,338	121,704	206,033	24,210	16,751	29,602	24,029	741,210	100.0

MUNICIPAL FINANCE ASSESSMENT - REGION OF YORK

(\$000's except demographics)

	RMV	Aurora	Markham	Newmarket	Richmond Hill	Vaughan	W/S	E/G	Georgina	King	Total	% of Total
LOCAL REVENUE**												
Property Taxation	96,271	8,836	43,819	9,922	30,716	40,928	4,868	3,918	8,605	4,707	252,590	46.2
Unconditional Grants	18,895	500	2,070	1,076	1,599	2,254	309	400	1,166	246	28,515	5.2
Conditional Grants	93,702	855	7,854	1,473	2,564	4,599	734	771	1,264	880	114,696	21.0
Payments in Lieu of Taxes	0	268	929	359	254	899	117	67	88	97	3,078	0.6
Fees & Service Charges	10,903	1,837	11,526	4,855	13,448	12,294	1,326	758	2,074	1,512	60,533	11.1
Program Revenues	21,151	3,348	22,068	4,804	10,017	20,364	1,395	1,042	1,751	1,375	87,315	16.0
TOTAL	240,922	15,644	88,266	22,489	58,598	81,338	8,749	6,956	14,948	8,817	546,727	100.0
OPERATING EXPENDITURES												
General Government	9,234	4,389	12,719	4,156	11,272	13,135	1,439	1,546	2,545	1,091	61,526	10.4
Protection	59,329	1,929	13,629	3,042	7,308	13,540	1,427	622	1,604	1,048	103,478	17.5
Transportation	20,950	2,367	18,082	3,914	11,724	15,189	1,384	1,670	3,906	2,051	81,237	13.7
Environmental - Sewer	48,706	134	2,126	1,229	2,769	3,477	418	130	1,245	301	60,535	10.2
- Water	25,936	1,104	3,826	2,172	1,635	2,982	371	420	791	341	39,578	6.7
- Solid Waste	0	1,162	17,891	3,615	5,864	9,238	761	795	1,255	1,070	41,651	7.0
Health & Social Services	118,721	0	17	0	251	121	50	0	136	2	119,298	20.1
Recreation	0	4,642	19,625	6,366	12,545	19,763	2,266	1,441	2,947	1,680	71,275	12.0
Planning	1,741	399	3,332	452	2,557	3,938	441	275	590	550	14,275	2.4
TOTAL	284,617	16,126	91,247	24,946	55,925	81,383	8,557	6,899	15,019	8,134	592,853	100.0
CAPITAL FUND REVENUES												
Revenue Fund	9,274	481	957	189	2,667	752	32	342	1,430	424	16,548	10.3
Reserves & Reserve Funds	24,293	2,832	4,782	1,079	11,180	16,951	796	548	1,940	407	64,808	40.2
Long Term Borrowing	40,076	0	7,999	0	0	0	0	0	0	0	48,075	29.8
Ontario Grants	10,871	1,153	3,550	594	2,380	2,499	31	214	708	279	22,279	13.8
Other Sources	3,933	25	709	209	3,830	194	12	535	100	41	9,588	5.9
TOTAL	88,447	4,491	17,997	2,071	20,057	20,396	871	1,639	4,178	1,151	161,298	100.0
CAPITAL FUND EXPENDITURES												
General Government	23,440	199	990	381	3,823	837	121	0	94	71	29,956	21.5
Protection	1,345	30	644	45	176	192	54	0	354	634	3,474	2.5
Transportation	36,333	1,672	5,593	1,245	2,501	2,090	284	605	2,472	518	53,313	38.2
Environmental - Sewer	284	57	241	179	880	489	92	0	2,281	99	4,602	3.3
- Water	8,821	255	772	103	1,081	958	123	284	5	72	12,474	8.9
- Solid Waste	(1)	54	122	0	0	230	0	0	0	0	405	0.3
Health & Social Services	1,324	0	0	0	0	0	0	0	0	0	1,324	0.9
Recreation	0	662	1,298	120	20,382	8,418	348	192	471	184	32,075	23.0
Planning	5	0	271	2	30	1,457	0	0	4	0	1,769	1.3
TOTAL	71,551	2,929	9,931	2,075	28,873	14,671	1,022	1,081	5,681	1,578	139,392	100.0
LONG-TERM DEBT OUTSTANDING												
DEBT CHARGES	39,906	2,253	25,332	1,630	22,606	30,369	951	3,079	6,769	563	133,458	
RESERVES/RESERVE FUNDS	5,526	16	1,328	614	1,608	4,124	346	477	1,173	32	15,244	
	107,453	15,537	44,453	7,381	54,395	39,318	7,146	2,036	6,978	5,574	290,271	

N/A=Not Applicable

* Source: Hardy Stevenson and Associates, "GTA 3Rs Analysis, Social Impact Technical Appendix", 1994b

**Local Revenue excludes direct charges

Source: Ministry of Municipal Affairs - MARS FIR's 1992

REGION OF PEEL

MUNICIPAL FINANCE ASSESSMENT - REGION OF PEEL

(\$000's except demographics)

	RMP	Brampton	Mississauga	Caledon	Total	% of Total
HOUSEHOLDS (1992)*	236,775	72,943	152,759	11,073	236,775	
		30.81%	64.52%	4.68%		
EQUALIZED TAXABLE ASSESSMENT						
Residential		11,513,260	28,420,649	2,609,749	42,543,658	
Commercial/Industrial/Business		2,365,151	6,296,071	407,460	9,068,682	
TOTAL		13,878,410	34,716,720	3,017,210	51,612,340	
Residential Portion Percentage		82.96%	81.86%	86.50%	82.4%	
Commercial/Other Portion Percentage		17.04%	18.14%	13.50%	17.6%	
TOTAL		100.00%	100.00%	100.00%	100.0%	
RESIDENTIAL ASSESSMENT PER HOUSEHOLD		27,342	33,973	36,821	179,680	
RESIDENTIAL MILL RATES						
Local		20.43	15.38	21.08	N/A	
Regional		14.47	15.26	12.35	N/A	
Schools		56.56	52.75	62.46	N/A	
TOTAL		91.46	83.40	95.89	N/A	
AVERAGE TAX						
Local		558.60	522.54	776.19	545.51	
Regional		395.64	518.56	454.74	477.71	
Schools		1,546.57	1,792.08	2,299.84	1,740.19	
Other Direct Charges		316.07	311.90	329.54	314.01	
TOTAL		2,816.87	3,145.08	3,860.31	3,077.42	
REVENUE						
Municipal Property Taxation						
Residential & Farm		71,669	157,376	14,216	243,261	23.2
Commercial, Industrial & Business		43,130	103,366	2,954	149,449	14.3
Other Direct Charges		0	0	0	0	0.0
TOTAL		114,799	260,742	17,170	392,711	37.5
School Taxes		176,593	446,864	30,410	653,867	62.5
TOTAL		291,392	707,606	47,580	1,046,578	100.0
TAX						
Levy - Local		69,585	131,138	11,025	211,748	20.2
- Regional		45,215	129,604	6,145	180,964	17.3
- School Board		176,593	446,864	30,410	653,867	62.5
TOTAL		291,393	707,606	47,580	1,046,579	100.0

MUNICIPAL FINANCE ASSESSMENT - REGION OF PEEL
(\$000's except demographics)

	RMP	Brampton	Mississauga	Caledon	Total	% of Total
LOCAL REVENUE**						
Property Taxation	180,963	69,585	131,138	11,025	392,711	44.6
Unconditional Grants	32,143	3,539	7,836	597	44,115	5.0
Conditional Grants	147,656	8,257	21,286	2,211	179,410	20.4
Payments in Lieu of Taxes	0	1,528	19,362	109	20,999	2.4
Fees & Service Charges	10,027	16,766	33,652	1,593	62,038	7.0
Program Revenues	108,008	21,533	49,724	2,213	181,478	20.6
TOTAL	478,797	121,208	262,998	17,748	880,751	100.0
OPERATING EXPENDITURES						
General Government	17,698	19,391	67,252	4,035	108,376	12.3
Protection	113,785	22,293	44,110	1,774	181,962	20.6
Transportation	17,539	39,282	83,487	5,486	145,794	16.5
Environmental - Sewer	67,570	289	3,853	114	71,826	8.1
- Water	49,527	0	0	0	49,527	5.6
- Solid Waste	13,487	4,971	12,734	1,200	32,392	3.7
Health & Social Services	193,341	814	641	8	194,804	22.1
Recreation	0	29,279	49,299	3,807	82,385	9.3
Planning	2,916	4,144	8,115	1,032	16,207	1.8
TOTAL	475,863	120,463	269,491	17,456	883,273	100.0
CAPITAL FUND REVENUES						
Revenue Fund	25,063	1,421	0	1,262	27,746	11.0
Reserves & Reserve Funds	49,752	26,453	48,517	491	125,213	49.8
Long Term Borrowing	51,736	11,210	1,701	237	64,884	25.8
Ontario Grants	7,802	1,268	15,841	271	25,182	10.0
Other Sources	7,599	488	142	50	8,279	3.3
TOTAL	141,952	40,840	66,201	2,311	251,304	100.0
CAPITAL FUND EXPENDITURES						
General Government	3,070	5,568	6,103	165	14,906	7.9
Protection	11,303	1,730	568	319	13,920	7.3
Transportation	21,366	6,903	37,102	1,364	66,735	35.2
Environmental - Sewer	30,230	10	933	0	31,173	16.5
- Water	15,983	0	0	0	15,983	8.4
- Solid Waste	6,064	0	0	0	6,064	3.2
Health & Social Services	3,685	3	0	0	3,688	1.9
Recreation	0	9,811	26,232	625	36,668	19.4
Planning	8	192	0	119	319	0.2
TOTAL	91,709	24,217	70,938	2,592	189,456	100.0
LONG-TERM DEBT OUTSTANDING	52,452	89,300	3,291	1,365	146,408	
DEBT CHARGES	22,249	13,359	1,682	571	37,861	
RESERVES/RESERVE FUNDS	376,167	52,946	375,438	7,189	811,740	

N/A=Not Applicable

* Source: Hardy Stevenson and Associates, "GTA 3Rs Analysis, Social Impact Technical Appendix", 1994b

**Local Revenue excludes direct charges

Source: Ministry of Municipal Affairs - MARS FIR's 1992

REGION OF HALTON

MUNICIPAL FINANCE ASSESSMENT - REGION OF HALTON

(\$000's except demographics)

	RNIH	Burlington	Halton Hills	Milton	Oakville	Total	% of Total
HOUSEHOLDS (1992)*	111,586	48,485	12,792	10,559	39,750	111,586	
		43.45%	11.46%	9.46%	35.62%	100.00%	
EQUALIZED TAXABLE ASSESSMENT							
Residential		7,781,760	2,096,414	1,857,542	8,227,213	19,962,929	
Commercial/Industrial/Business		2,763,519	525,581	825,922	2,836,230	6,951,251	
TOTAL		10,545,279	2,621,995	2,683,464	11,063,443	26,914,180	
Residential Portion Percentage		73.79%	79.95%	69.22%	74.36%	74.2%	
Commercial/Other Portion Percentage		26.21%	20.05%	30.78%	25.64%	25.8%	
TOTAL		100.00%	100.00%	100.00%	100.00%	100.0%	
RESIDENTIAL ASSESSMENT PER HOUSEHOLD		7,842	6,805	6,604	9,267	178,902	
RESIDENTIAL MILL RATES							
Local		71.66	77.77	65.06	78.44	N/A	
Regional		42.12	52.43	59.10	56.40	N/A	
Schools		181.33	219.44	249.95	190.18	N/A	
TOTAL		295.11	349.64	374.11	325.02	N/A	
AVERAGE TAX PER HOUSEHOLD							
Local		561.96	529.22	429.66	726.90	604.44	
Regional		330.31	356.79	390.30	522.66	407.54	
Schools		1,421.99	1,493.29	1,650.67	1,762.40	1,573.07	
Other Direct Charges		275.81	298.84	258.72	277.94	277.59	
TOTAL		2,590.06	2,678.14	2,729.34	3,289.90	2,862.64	
REVENUE							
Municipal Property Taxation							
Residential & Farm		47,865	12,461	9,407	47,509	117,242	28.4
Commercial, Industrial & Business		21,862	4,281	5,559	21,801	53,504	12.9
Other Direct Charges		0	0	0	0	0	0.0
TOTAL		69,727	16,743	14,966	69,310	170,746	41.3
School Taxes		95,480	24,379	25,829	96,724	242,412	58.7
TOTAL		165,207	41,122	40,795	166,034	413,158	100.0
TAX							
Levy - Local		40,828	9,465	7,819	40,464	98,576	23.9
- Regional		28,899	7,278	7,148	28,848	72,173	17.5
- School		95,480	24,379	25,829	96,724	242,412	58.7
Total Tax Levy		165,207	41,122	40,796	166,036	413,161	100.0

MUNICIPAL FINANCE ASSESSMENT - REGION OF HALTON
(5000's except demographics)

	RMH	Burlington	Halton Hills	Milton	Oakville	Total	% of Total
LOCAL REVENUE**							
Property Taxation	72,170	40,828	9,465	7,819	40,464	170,746	46.9
Unconditional Grants	14,737	2,722	1,120	567	2,184	21,330	5.9
Conditional Grants	53,358	5,257	1,277	1,600	4,538	66,030	18.1
Payments in Lieu of Taxes	0	2,956	445	680	1,935	6,016	1.7
Fees & Service Charges	6,787	5,622	2,026	1,460	7,788	23,683	6.5
Program Revenues	52,224	10,113	2,278	1,679	9,804	76,098	20.9
TOTAL	199,276	67,498	16,611	13,805	66,713	363,903	100.0
OPERATING EXPENDITURES							
General Government	14,092	10,394	3,805	2,080	11,096	41,467	11.4
Protection	42,225	11,134	2,496	1,544	12,278	69,677	19.1
Transportation	5,318	22,060	4,311	4,574	20,129	56,392	15.5
Environmental - Sewer	24,864	998	109	84	331	26,386	7.2
- Water	22,300	0	0	384	0	22,684	6.2
- Solid Waste	21,876	2,131	688	58	2,187	26,940	7.4
Health & Social Services	65,432	290	200	12	461	66,395	18.2
Recreation	968	18,570	4,257	4,556	17,058	45,409	12.4
Planning	2,809	2,247	751	497	3,135	9,439	2.6
TOTAL	199,884	67,824	16,617	13,789	66,675	364,789	100.0
CAPITAL FUND REVENUES							
Revenue Fund	12,237	883	972	906	3,047	18,045	12.7
Reserves & Reserve Funds	13,039	7,443	2,729	884	19,194	43,289	30.5
Long Term Borrowing	39,884	2,750	0	371	2,192	45,197	31.8
Ontario Grants	12,869	3,869	785	2,800	10,464	30,787	21.7
Other Sources	2,859	555	705	262	252	4,633	3.3
TOTAL	80,888	15,500	5,191	5,223	35,149	141,951	100.0
CAPITAL FUND EXPENDITURES							
General Government	1,911	263	339	100	497	3,110	2.7
Protection	1,805	1,057	1,357	43	237	4,499	3.9
Transportation	8,002	11,400	2,258	4,009	22,691	48,360	41.8
Environmental - Sewer	4,830	944	8	11	101	5,894	5.1
- Water	9,959	0	0	0	0	9,959	8.6
- Solid Waste	14,294	0	0	0	0	14,294	12.4
Health & Social Services	21,510	54	0	0	17	21,581	18.7
Recreation	133	2,721	315	1,679	3,033	7,881	6.8
Planning	17	0	6	0	110	133	0.1
TOTAL	62,461	16,439	4,283	5,842	26,686	115,711	100.0
LONG TERM DEBT OUTSTANDING							
DEBT CHARGES	99,524	28,901	5,513	3,965	12,256	150,159	
RESERVES/RESERVE FUNDS	18,298	4,536	655	583	2,386	26,458	
	89,224	46,537	10,613	5,350	25,600	177,324	

N/A - Not Applicable

* Source: Hardy Stevenson and Associates, "GTA 3Rs Analysis, Social Impact Technical Appendix", 1994b

**Local Revenue excludes direct charges

Source: Ministry of Municipal Affairs - MARS FIR's 1992

SCHEDULE B

Costs of Diversion by Municipality

1992 TOTAL GTA 3Rs COSTS

(in dollars)

	Collection	Processing	Other	Gross Cost	Rev & Grants	Net Cost	Res. % of Taxes	Res. Costs	1992 Hshlds.	1992 Tonnage	Cost/ Tonne Gross Net	Residential Cost/Hshld. Gross Net
Durham Region (1993 Budget)												
Overhead			769,800	769,800		769,800						
Facilities Mgt			77,000	77,000		77,000						
MRF		3,625,600		3,625,600		3,625,600						
Blue Box	1,873,900			1,873,900		1,873,900						
Operations	884,000		1,516,400	2,400,400		2,400,400						
Material Sales				0	727,000	-727,000						
Tipping Fees (Rec.)				0	10,000	-10,000						
Rec'd from Area Munic.				0	4,941,400	-4,941,400						
MOEE					472,300	-472,300						
Subtotal	2,757,900	3,625,600	2,363,200	8,746,700	6,150,700	2,596,000						
Oshawa												
Blue Box		643,504		643,504		643,504						
Compost		211,834		211,834		211,834						
Subtotal	0	855,338	0	855,338	0	855,338						
Ajax												
Blue Box		352,000		352,000		352,000						
Compost		153,670		153,670		153,670						
Subtotal	0	505,670	0	505,670	0	505,670						
Clarington												
Tires		5,500		5,500		5,500						
Cardboard		605		605		605						
Scrap Metal				0	666	-666						
Leaf Coll/Compost	20,871	20,643		41,514		41,514						
Oil & Solvent		2,800		2,800		2,800						
Christmas Trees	5,233			5,233		5,233						
Blue Box		230,048		230,048		230,048						
Subtotal	26,104	259,596	0	285,700	666	285,034						

1992 TOTAL GTA 3Rs COSTS
(in dollars)

	Collection	Processing	Other	Gross Cost	Rev & Grants	Net Cost	Res. % of Taxes	Res. Costs	1992 Hshlds.	1992 Tonnage	Cost/ Tonne Gross Net	Residential Cost/Hshld. Gross Net
Pickering												
Blue Box/Igloo		376,526	10,000	386,526		386,526						
Compost		132,724		132,724		132,724						
Leaf	54,500			54,500		54,500						
Christmas Trees	28,275			28,275		28,275						
Bulk Items	17,316			17,316		17,316						
Subtotal	100,091	509,250	10,000	619,341	0	619,341						
Whitby												
Special Collection	116,397			116,397	3,839	112,558						
Blue Box	13,748	378,621	11,081	403,450		403,450						
Compost		200,058	4,544	204,602		204,602						
Subtotal	130,145	578,679	15,625	724,449	3,839	720,610						
Brock												
Blue Box		50,836		50,836		50,836						
Leaf Pickup	2,260			2,260		2,260						
Subtotal	2,260	50,836	0	53,096	0	53,096						
Scugog												
Blue Box	4,279	53,816		58,095		58,095						
Compost		137		137	4,702	-4,565						
Subtotal	4,279	53,953	0	58,232	4,702	53,530						

1992 TOTAL GTA 3Rs COSTS

(in dollars)

	Collection	Processing	Other	Gross Cost	Rev & Grants	Net Cost	Res. % of Taxes	Res. Costs	1992 Hshlds.	1992 Tonnage	Cost/ Tonne Gross Net	Residential Cost/Hshld. Gross Net
Uxbridge												
Large Item	13,330			13,330	1,300	12,030						
Blue Box		54,513		54,513		54,513						
Compost			9,565	9,565	6,377	3,188						
Subtotal	13,330	54,513	9,565	77,408	7,677	69,731						
 Durham Transfer Adjustment				-4,941,400	-4,941,400							
Total Durham Costs	3,034,109	6,493,435	2,398,390	6,984,534	1,226,184	5,758,350	69%	3,944,470	140,831	36,987	189 156	50 28

NOTES:

Durham Region assumes financial responsibility for Blue Box collection by reimbursing each municipality via its reserve

Durham Region charged \$105.00/tonne for materials delivered to MRF. Operating shortfalls financed via reserve

All other programs aside from Blue Box are a direct cost to area municipality providing that program

Durham Region costs derived from Report on the Annual Review of the Solid Waste Management System and the 1993 Current and Capital Budgets (table 3-4 pg 23)

The costs for the Region are 1993 costs as 1992 year end figures were not available at the time of this report

Costs for Oshawa were derived from the Department of Public Works Maintenance Division, 1993 Current Budget.

Oshawa's costs do not include collection of White Goods & Christmas Trees as the costs are not broken out of special collection.

Costs for Ajax were unavailable at the time of this report, the costs were taken from a management report prepared by Durham Region

Costs for Ajax are 1993 budget figures and include only costs for Blue Box and Composting

Costs for Clarington were derived from a special report prepared for FUR by Grant Aston

Costs for Pickering were derived from 1993 Budget Environmental Services

Costs for Whitby were derived from the December 31, 1992 Garbage Collection/Disposal Report - Town of Whitby

Costs for Brock were derived from the 1993 budget - Garbage Collection pg 27, and conversation with Treasurer to obtain processing cost

Costs for Scugog were obtained from the 1993 Financial Statement for Environmental Services

Costs for Uxbridge were obtained from an management report prepared specifically for FUR for this assignment by the Treasurer

Transfer adjustment used to take into account the revenues that flow from the upper tier to lower tier

1992 TOTAL GTA 3Rs COSTS
(in dollars)

	Collection	Processing	Other	Gross Cost	Rev & Grants	Net Cost	Res. % of Taxes	Res. Costs	1992 Hshlds.	1992 Tonnage	Cost/ Tonne Gross Net	Residential Cost/Hshld. Gross Net
Metro Toronto												
Marketing/Planning			343,500	343,500		343,500						
Composting		440,000		440,000		440,000						
I.C. & I		385,000		385,000		385,000						
Area Munic. Grants	9,970,000			9,970,000	2,667,300	7,302,700						
MRF		891,700		891,700	487,200	404,500						
HHW		2,553,300		2,553,300		2,553,300						
Transfer Station		4,113,200		4,113,200	2,189,200	1,924,000						
Leaf & Yard Comp		1,059,900		1,059,900		1,059,900						
Soil Recycling		5,666,500		5,666,500		5,666,500						
Pilot Wet/Dry	202,400			202,400		202,400						
Sale of Materials				0	1,778,900	-1,778,900						
Subtotal	10,172,400	15,109,600	343,500	25,625,500	7,122,600	18,502,900						
Etobicoke												
Blue Box	1,683,607		281,859	1,965,466		1,965,466						
Metro Subsidies				0	1,443,763	-1,443,763						
Apartment	226,168		158,592	384,760	349,476	35,284						
Leaf & Yard	1,402,637		115,370	1,518,007		1,518,007						
Wet Waste Pilot	111,321		9,157	120,478		120,478						
Leaf Collection	454,285			454,285		454,285						
Subtotal	3,878,018	0	564,978	4,442,996	1,793,239	2,649,757						
North York												
Blue Box	3,503,900		115,500	3,619,400		3,619,400						
Metro Subsidies				0	2,931,200	-2,931,200						
Compost		221,600		221,600	368,000	-146,400						
White Goods	365,000			365,000		365,000						
Christmas Trees	30,600			30,600		30,600						
Yard Waste	1,929,500			1,929,500		1,929,500						
Pilot Wet/Dry	794,800			794,800		794,800						
Subtotal	6,623,800	221,600	115,500	6,960,900	3,299,200	3,661,700						

1992 TOTAL GTA 3Rs COSTS

(in dollars)

	Collection	Processing	Other	Gross Cost	Rev & Grants	Net Cost	Res. % of Taxes	Res. Costs	1992 Hshlds.	1992 Tonnage	Cost/ Tonne Gross Net	Residential Cost/Hshld. Gross Net
Scarborough												
Yard Waste	1,740,528		3,154	1,743,682		1,743,682						
Large Item	1,091,862			1,091,862		1,091,862						
Compost		531,469	153,776	685,245	598,685	86,560						
Special Items	827,628			827,628	52,054	775,574						
Blue Box	2,256,124		15,221	2,271,345		2,271,345						
Metro Subsidies				0	2,681,784	-2,681,784						
Subtotal	5,916,142	531,469	172,151	6,619,762	3,332,523	3,287,239						
Toronto												
3Rs Labour & Equipt	7,199,194			7,199,194	275,612	6,923,582						
Administration			400,914	400,914		400,914						
Yard Services			763,359	763,359		763,359						
Clerical			386,745	386,745		386,745						
Subtotal	7,199,194	0	1,551,018	8,750,212	275,612	8,474,600						
York												
Blue Box	602,276		136,394	738,670		738,670						
Metro Subsidies				0	683,833	-683,833						
Subtotal	602,276	0	136,394	738,670	683,833	54,837						

1992 TOTAL GTA 3Rs COSTS
(in dollars)

	Collection	Processing	Other	Gross Cost	Rev & Grants	Net Cost	Res. % of Taxes	Res. Costs	1992 Hshlds.	1992 Tonnage	Cost/ Tonne Gross	Net	Residential Cost/Hshld. Gross	Net
East York														
Yard Waste	212,620			212,620		212,620								
Xmas Tree	25,316			25,316		25,316								
Blue Box	826,983		10,060	837,043		837,043								
Metro Subsidies					629,017	-629,017								
Subtotal	1,064,919	0	10,060	1,074,979	629,017	445,962								
 Metro Transfer Adjustment	 -9,970,000				 -9,970,000									
Total Metro Costs	25,486,749	15,862,669	2,893,601	54,213,019	7,166,024	47,046,995	48%	22,582,558	875,021	201,177	269	234	62	26

NOTES

Financial responsibility for Blue Box and Composting programs remains with Metro

Financial responsibility for all other 3Rs programs are handled by the area municipalities

Costs for the Region were derived from the 1993 Operating Budget - Environmental Services Summary - Works Dept.

Costs for Etobicoke were derived from The 1992 Waste Management Summary Report, February 1993

Costs for North York were derived from 1993 Current Budget Estimates - Public Works Dept.

Costs for Scarborough were derived from the Works and Environment Financial Statement, December 31, 1992.

Costs for Toronto were derived from a management report specifically prepared for FUR for this assignment

Costs for York were derived from the 1993 Works Department Resource Worksheet

Costs for East York were derived from 1992 Statement of Revenues and Expenditures

Transfer adjustment used to take into account the revenues that flow from the upper tier to lower tier

1992 TOTAL GTA 3Rs COSTS
(in dollars)

	Collection	Processing	Other	Gross Cost	Rev & Grants	Net Cost	Res. % of Taxes	Res. Costs	1992 Hshlds.	1992 Tonnage	Cost/ Tonne		Residential Cost/Hshld.	
											Gross	Net	Gross	Net
Total GTA	49,602,678	33,134,677	9,847,583	89,636,868	18,981,465	70,655,403	54%	38,247,764	1,525,867	398,625	225	177	59	25
Total GTA Excl Metro	24,115,929	17,272,008	6,953,982	35,423,849	11,815,441	23,608,408	66%	15,665,207	650,846	197,448	179	120	54	24

1992 TOTAL GTA 3Rs COSTS

(in dollars)

	Collection	Processing	Other	Gross Cost	Rev & Grants	Net Cost	Res. % of Taxes	Res. Costs	1992 Hshlds.	1992 Tonnage	Cost/ Tonne Gross	Residential Cost/Hshld. Gross	Net
York Region (1992 Budget)													
Composting	675,000		50,000	725,000	705,000	20,000							
HHW	1,000,000		60,000	1,060,000	184,000	876,000							
Subtotal	1,675,000	0	110,000	1,785,000	889,000	896,000							
East Gwillimbury													
Contract - Metals	11,034			11,034		11,034							
Compost-Spring/Fall	3,852	1,457		5,309		5,309							
Xmas trees		370		370		370							
Recycling (B.B)	162,223	28,668		190,891	76,555	114,336							
Recycling Compound	1,809	2,304		4,113	1,231	2,882							
Composting			6,745	6,745	13,365	-6,620							
Subtotal	178,918	32,799	6,745	218,462	91,151	127,311							
Aurora													
Recycling Admin.			73,309	73,309		73,309							
Recycling Collection	186,939		2,138	189,077		189,077							
Tire Recycling		295		295		295							
Processing Fees		90,047		90,047		90,047							
MOEE Operating				0	143,372	-143,372							
Cost Recovery				0	580	-580							
Subtotal	186,939	90,342	75,447	352,728	143,952	208,776							
Georgina													
Blue Box	155,446	29,224	3,637	188,307	70,370	117,937							
Leaf Collection	3,613			3,613		3,613							
Compost'g		72,558		72,558	48,932	23,626							
Fine Paper		365		365	140	225							
Christmas Tree	3,961			3,961		3,961							
Tire Recycling	3,146			3,146	1,800	1,346							
Miscellaneous			182	182	-108	290							
Subtotal	166,166	102,147	3,819	272,132	121,134	150,998							

(in dollars)

W. Stouffville

1992 TOTAL GTA 3Rs COSTS

(in dollars)

	Collection	Processing	Other	Gross Cost	Rev & Grants	Net Cost	Res. % of Taxes	Res. Costs	1992 Hshlds.	1992 Tonnage	Cost/ Tonne Gross Net	Residential Cost/Hshld. Gross Net
Contract	140,513	72,265	22,111	234,889	98,243	136,646						
Subtotal	140,513	72,265	22,111	234,889	98,243	136,646						
King												
Blue Box	116,952	36,079	106,525	259,556		259,556						
Composting		320	821	1,141		1,141						
HHW			141	141		141						
Cardboard	7,801			7,801		7,801						
White Metal Depot	8,102			8,102	2,940	5,162						
Subtotal	132,855	36,399	107,487	276,741	2,940	273,801						
Total York Costs	6,426,974	1,602,229	1,208,638	9,237,841	4,249,633	4,988,208	68%	3,391,981	161,654	54,101	171 92	57 21

NOTES:

York Region assumes financial responsibility for the HHW and Organic Yard Waste programs

All other programs including Blue Box are a direct cost to area municipality providing that program

Processing is based on a cost sharing approach between the area municipalities

York Region costs derived from 1993 Budget Detail Report Prepared for Council

The costs for the Region are 1992 budget figures as 1992 year end figures were not provided at the time of this report

The costs for E. Gwillimbury were derived from the 1993 Budget Summary

The costs for Aurora were derived from 1992 operating financials

The costs for Georgina were derived from the 1993 Budget Statement for Refuse Recycling

The costs for Markham were derived from the 1993 Operating Budget Worksheet for Waste Management. The costs may include processing for other municipalities

The costs for Newmarket were derived from the 1993 Budget

The costs for Richmond Hill were derived from the 1993 Budget

The costs for Vaughan were derived from a management report specifically prepared for FUR for this assignment

The costs for Whitchurch - Stouffville were derived from an management report prepared specifically for FUR for this assignment

The costs for King were derived from an management report prepared specifically for FUR for this assignment

1992 TOTAL GTA 3Rs COSTS
(in dollars)

	Collection	Processing	Other	Gross Cost	Rev & Grants	Net Cost	Res. % of Taxes	Res. Costs	1992 Hshlds.	1992 Tonnage	Cost/ Tonne Gross	Residential Cost/Hshld. Net
Peel Region												
Waste Red & Rec.	1,550,398		966,156	2,516,554	676,210	1,840,344						
Grants to Municipalities		5,620,473		5,620,473		5,620,473						
Subtotal	1,550,398	5,620,473	966,156	8,137,027	676,210	7,460,817						
Brampton												
Regional Grant				0	527,244	-527,244						
Admin			210,283	210,283		210,283						
Blue Boxes	990,841			990,841		990,841						
Blue Boxes apts	212,102			212,102		212,102						
Phone Books	9,816			9,816		9,816						
Depots	109			109		109						
Xmas trees	23,072			23,072		23,072						
Fine Papers	26			26		26						
White Goods		21,665		21,665		21,665						
Salvage		57,129		57,129		57,129						
Promotion			65,131	65,131		65,131						
Leaves	119,161			119,161		119,161						
Subtotal	1,355,127	78,794	275,414	1,709,335	527,244	1,182,091						
Caledon												
Regional Grant				0	121,735	-121,735						
Admin			45,685	45,685		45,685						
Xmas Tree	11,891			11,891		11,891						
Leaves	7,316			7,316		7,316						
Blue Box	315,757			315,757		315,757						
GST			9,389	9,389		9,389						
Subtotal	334,964	0	55,074	390,038	121,735	268,303						
Mississauga												
Regional Grant				0	1,773,499	-1,773,499						
Admin			166,390	166,390		166,390						
Blue Box	4,649,524			4,649,524		4,649,524						
Composting		856,733		856,733	856,733	0						
Depots	102,731			102,731		102,731						
MCCC	118,000			118,000		118,000						
Leaves	665,325			665,325		665,325						

1992 TOTAL GTA 3Rs COSTS

(in dollars)

	Collection	Processing	Other	Gross Cost	Rev & Grants	Net Cost	Res. % of Taxes	Res. Costs	1992 Hshlds.	1992 Tonnage	Cost/ Tonne Gross Net	Residential Cost/Hshld. Gross Net
White Goods	374,496			374,496		374,496						
Trees	72,696			72,696		72,696						
OSDA Top-Up				0	39,584	-39,584						
MTO Grant				0	166,000	-166,000						
Subtotal	5,982,772	856,733	166,390	7,005,895	2,835,816	4,170,079						
Peel Transfer Adjustment				-5,620,473		-5,620,473						
Total Peel Costs	9,223,261	6,556,000	1,463,034	11,621,822	4,161,005	7,460,817	62%	4,618,246	236,775	59,967	194 124	49 20

NOTES:

The Region assumes financial responsibility for the collection and processing of most of the 3Rs programs

All costs for Peel Region were provided by the Region

Transfer adjustment used to take into account the revenues that flow from the upper tier to lower tier

(in dollars)

(in dollars)										Cost/ Tonne		Residential Cost/Hshld.		
	Collection	Processing	Other	Gross Cost	Rev & Grants	Net Cost	Res. % of Taxes	Res. Costs	1992 Hshlds.	1992 Tonnage	Gross	Net	Gross	Net
Halton Region														
MRF		236,717		236,717		236,717								
Contract (B. Box)	3,047,321		358	3,047,679	1,698,220	1,349,459								
Tipping Rev.					2,356,197	-2,356,197								
Vehicles			298,627	298,627		298,627								
HHW (2)	636,799		39,271	676,070	20,835	655,235								
Debt Charges			552,283	552,283		552,283								
Igloo	80,367			80,367		80,367								
Admin			346,330	346,330		346,330								
LDPE Project	-3,352			-3,352	2,737	-6,089								
Reserve Fund Contribution			500,000	500,000		500,000								
Magazine Recyc.					42,825	-42,825								
Subtotal	3,761,135	236,717	1,736,869	5,734,721	4,120,814	1,613,907								
Burlington														
Compost			101,482	101,482	97,303	4,179								
IC Cardboard	30,539			30,539		30,539								
Christmas Tree	27,715		2,105	29,820		29,820								
Large Item	56,460		3,637	60,097	18,900	41,197								
Leaf Program	394,721			394,721		394,721								
Brush Program	33,134		246	33,380		33,380								
Blue Box		1,064,100		1,064,100		1,064,100								
Re-Use Centre					22,248	-22,248								
Subtotal	542,569	1,064,100	107,470	1,714,139	138,451	1,575,688								
Halton Hills														
Compost	38,516		1452	39,968	34,236	5,732								
IC Cardboard	19,836			19,836		19,836								
Christmas Tree	2,973	1,373	244	4,590		4,590								
Large Item	31,891			31,891	1,068	30,823								
Leaf Program	20,757	9,555		30,312	629	29,683								
Yard waste	16,661	10,396		27,057		27,057								
Blue Box	175,457	199,976	5,329	380,762	174,728	206,034								
Subtotal	306,091	221,300	7,025	534,416	210,661	323,755								
Milton														

1992 TOTAL GTA 3Rs COSTS
(in dollars)

	Collection	Processing	Other	Gross Cost	Rev & Grants	Net Cost	Res. % of Taxes	Res. Costs	1992 Hshlds.	1992 Tonnage	Cost/ Tonne		Residential Cost/Hshld.	
											Gross	Net	Gross	Net
Compost	54,390		3,570	57,960	61,386	-3,426								
IC Cardboard	6,514			6,514		6,514								
Large Item	30,260			30,260		30,260								
Leaf/Brush Program	100,000			100,000		100,000								
Blue Box		150,727	5,754	156,481		156,481								
Subtotal	191,164	150,727	9,324	351,215	61,386	289,829								
Oakville														
Blue Box		947,500	23,232	970,732		970,732								
IC Cardboard	90,453			90,453		90,453								
Spring Cleanup	37,000			37,000	3,504	33,496								
Leaf Program	243,355			243,355		243,355								
Brush Program	259,818			259,818		259,818								
Subtotal	630,626	947,500	23,232	1,601,358	3,504	1,597,854								
Halton Transfer Adjustment				-2,356,197	-2,356,197									
Total Halton Costs	5,431,585	2,620,344	1,883,920	7,579,652	2,178,619	5,401,033	69%	3,710,510	111,586	46,393	163	116	68	33

NOTES:

Halton Region assumes financial responsibility for Blue Box collection

Halton Region charged \$100.00/tonne for materials delivered to MRF

All other programs aside from Blue Box are a direct cost to area municipality providing that program

Halton Region costs derived from year end 1992 monthly Budget Report for Waste Management

Burlington costs derived from management report provided by Municipal staffAnderson

Halton Hills costs derived from 1993 final operating budget

Milton costs derived from Public Works Department 1993 budget Statement

Oakvilles costs derived from an internal management report specifically prepared for FUR by Municipal staff

Transfer adjustment used to take into account the revenues that flow from the upper tier to lower tier

SCHEDULE C

Effects Analysis of Alternative Systems

REGION OF DURHAM

MOE 3Rs ANALYSIS**MUNICIPAL FINANCE
EFFECTS ANALYSIS OF 3R SYSTEMS****RESIDENTIAL SYSTEMS**

C-1

DURHAM

	Gross Capital Costs (buildings, vehicles equipment, etc.)	Value of Potential External Capital Funding Sources	Annual Operating Cost Estimates (Labour, Overhead, Maint., Repair, etc.)	Added Operating Overhead Costs	Potential Annual Operating Cost/ Savings	Net Annual Costs (incl Annualized Capital Cost)
Existing	9,697,000		3,359,960 DIV RT 28%	2,398,390 71%	0	7,269,337
Existing/ Committed	13,858,000		8,524,762 DIV RT 29%	2,131,190 25%	0	12,815,307
Direct Cost A	20,436,000		10,464,443 DIV RT 43%	2,616,111 25%	0	16,264,893
Direct Cost B	20,436,000		10,464,443 DIV RT 43%	2,616,111 25%	16,200,000	32,464,893
Expanded Blue	21,635,000		11,326,754 DIV RT 44%	2,831,689 25%	0	17,529,610
Wet / Dry	60,186,000		9,443,670 DIV RT 57%	2,360,917 25%	0	21,182,775
Mixed Waste a	88,336,000		15,791,035 DIV RT 59%	3,947,759 25%	0	33,503,317
Mixed Waste b	88,336,000		18,140,956 DIV RT 77%	3,947,759 25%	0	35,853,238

EFFECTS ANALYSIS OF 3R SYSTEMS

DURHAM

DIVERSION COSTS PER HOUSEHOLD

C-2

	3R Commitment	Annual Cost of Commitment	Residential Share of Annual Costs %	\$	Total Business Tax (\$000s)	Percent Business Tax
					69,236	
Existing	9,697,000	7,269,337	69%	5,015,843	2,253	3%
Committed	13,858,000	12,815,307	69%	8,842,562	3,973	6%
Direct Cost A	20,436,000	16,264,893	69%	11,222,776	5,042	7%
Direct Cost B	20,436,000	32,464,893	69%	27,422,776	5,042	7%
Expanded	21,635,000	17,529,610	69%	12,095,431	5,434	8%
Wet/dry	60,186,000	21,182,775	69%	14,616,115	6,567	9%
Mixed a	88,336,000	33,503,317	69%	23,117,289	10,386	15%
Mixed b	88,336,000	35,853,238	69%	24,738,734	11,115	16%

	Existing Residential Costs	Cost of Commitment	Total Future Residential Costs	Total Future Households	Costs Per Household Future	Existing	Percent Change
Existing	0	5,015,843	5,015,843	182,336	0	36	--
Committed	5,015,843	3,826,719	10,320,806	182,336	57	36	59%
Dir Cost A	5,015,843	6,206,934	12,701,020	182,336	70	36	96%
Dir Cost B	5,015,843	22,406,934	28,901,020	182,336	159	36	345%
Expanded	5,015,843	7,079,588	13,573,675	182,336	74	36	109%
Wet/dry	5,015,843	9,600,272	16,094,359	182,336	88	36	148%
Mixed a	5,015,843	18,101,446	24,595,532	182,336	135	36	279%
Mixed b	5,015,843	19,722,891	26,216,978	182,336	144	36	304%

Note: Household growth is used to show the effect of property assessment growth, but commercial/industrial assessment growth is not assumed to change the taxation split in the future. Moreover, new household growth will decrease the existing household cost for diversion, while future household growth beyond the period shown here, but still serviced by the systems is not included in the analysis.

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R SYSTEMS

DURHAM

MUNICIPAL TAXATION PER HOUSEHOLD

C-3

	Total Municipal Taxation (\$000)	Existing Cost of Diversion (\$000)	Annual Cost of Commitment (\$000)	Existing Diversion Cost as a Percent of Total Taxation	Future Diversion Cost as a Percent of Total Taxation
Existing	219,512	0	7,269	0%	3%
Committed	219,512	5,016	12,815	2%	8%
Dir Cost A	219,512	5,016	16,265	2%	10%
Dir Cost B	219,512	5,016	32,465	2%	17%
Expanded	219,512	5,016	17,530	2%	10%
Wet/dry	219,512	5,016	21,183	2%	12%
Mixed a	219,512	5,016	33,503	2%	18%
Mixed b	219,512	5,016	35,853	2%	19%

	Total Municipal Taxation Per Hshold	Cost of Diversion Commitment Per Hshold	Percent of Household Taxation
Existing	1,552	36	2%
Committed	1,552	57	4%
Dir Cost A	1,552	70	4%
Dir Cost B*	1,552	159	10%
Expanded	1,552	74	5%
Wet/dry	1,552	88	6%
Mixed a	1,552	135	9%
Mixed b	1,552	144	9%

* Fees of \$100 per household are averaged over all households in the Region.

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R SYSTEMS**DURHAM****MUNICIPAL DEBT****C-4**

	Total Existing Debt (\$000)	Total Diversion Debt (\$000)	Percent Increase
Existing	71,924	9,697	13%
Committed	71,924	13,858	19%
Dir Cost A	71,924	20,436	28%
Dir Cost B	71,924	20,436	28%
Expanded	71,924	21,635	30%
Wet/dry	71,924	60,186	84%
Mixed a	71,924	88,336	123%
Mixed b	71,924	88,336	123%

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R SYSTEMS

DURHAM

DEBT PAYMENTS

C-5

	Existing Debt Charges (\$000)	Existing Expenditures (\$000)	Percent Existing Debt Charges / Expenditures	
Existing	13,257	571,369	2.3%	
Committed	13,257	571,369	2.3%	
Dir Cost A	13,257	571,369	2.3%	
Dir Cost B	13,257	571,369	2.3%	
Expanded	13,257	571,369	2.3%	
Wet/dry	13,257	571,369	2.3%	
Mixed a	13,257	571,369	2.3%	
Mixed b	13,257	571,369	2.3%	
	Future Commitment D-Charges (9%, 10yrs)	Future Debt Charges Committed Plus Existing	Percent Future Debt Charges to Expenditures	Increase
Existing	1,511	14,768	2.6%	0.3%
Committed	2,159	15,416	2.7%	0.4%
Dir Cost A	3,184	16,441	2.9%	0.6%
Dir Cost B	3,184	16,441	2.9%	0.6%
Expanded	3,371	16,628	2.9%	0.6%
Wet/dry	9,378	22,635	4.0%	1.6%
Mixed a	13,765	27,022	4.7%	2.4%
Mixed b	13,765	27,022	4.7%	2.4%

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R SYSTEMS**DURHAM****DEBT CAPACITY****C-6**

	Existing Total Available Debt Capacity (9%, 5yr)	Existing Debt	Current Remaining Debt Capacity	Percent Remaining	Committed Diversion	Percent Capacity Remaining After Committed
Existing	444,485	71,924	372,561	84%	9,697	82%
Committed	444,485	71,924	372,561	84%	13,858	81%
Dir Cost A	444,485	71,924	372,561	84%	20,436	79%
Dir Cost B	444,485	71,924	372,561	84%	20,436	79%
Expanded	444,485	71,924	372,561	84%	21,635	79%
Wet/dry	444,485	71,924	372,561	84%	60,186	70%
Mixed a	444,485	71,924	372,561	84%	88,336	64%
Mixed b	444,485	71,924	372,561	84%	88,336	64%

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R SYSTEMS**DURHAM****FUTURE GTA HOUSEHOLDS****C-7**

	1992 Households	New Households	Total Future Households	Percent Increase
Existing	140,831	41,505	182,336	29%
Committed	140,831	41,505	182,336	29%
Dir Cost A	140,831	41,505	182,336	29%
Dir Cost B	140,831	41,505	182,336	29%
Expanded	140,831	41,505	182,336	29%
Wet/dry	140,831	41,505	182,336	29%
Mixed a	140,831	41,505	182,336	29%
Mixed b	140,831	41,505	182,336	29%

Source: Hardy Stevenson and Associates

METROPOLITAN TORONTO

MOE 3Rs ANALYSIS			RESIDENTIAL SYSTEMS			
MUNICIPAL FINANCE EFFECTS ANALYSIS FOR 3R SYSTEMS			C-8			
	Gross Capital Costs (buildings, vehicles equipment, etc.)	Capital Funding Sources	Annual Operating Cost Estimates (Labour, Overhead, Maint., Repair, etc.)	Added Operating Overhead Costs	Potential Annual Operating Cost Savings	Net Annual Levy (incl Annualized Capital Cost)
Existing	7,090,000		44,648,605 DIV RT 19%	2,398,390 5%	0	48,151,759
Existing / Committed	16,025,000		46,404,087 DIV RT 21%	5,104,450 11%	0	54,005,554
Direct Cost A	37,866,000		43,355,139 DIV RT 29%	10,838,785 25%	0	60,094,207
Direct Cost B	37,866,000		43,355,139 DIV RT 29%	10,838,785 25%	51,000,000	111,094,207
Expanded Blue	42,666,000		50,951,592 DIV RT 33%	12,737,898 25%	0	70,337,710
Wet / Dry	141,746,000		33,084,096 DIV RT 52%	8,271,024 25%	0	63,441,995
Mixed Waste a	279,866,000		107,555,502 DIV RT 52%	26,888,876 25%	0	178,053,123
Mixed Waste b	279,866,000		124,565,453 DIV RT 72%	31,141,363 25%	0	199,315,562

EFFECTS ANALYSIS OF 3R SYSTEMS

Metro

C-9

DIVERSION COSTS PER HOUSEHOLD

GROWTH 9%

	3R Capital	Annual Cost of Diversion	Residential Share of Annual Costs %	\$	Total Business Tax (\$000s)	Percent Business Tax
					1,061,613	
Existing	7,090,000	48,151,759	48%	23,112,845	25,039	2%
Committed	16,025,000	54,005,554	48%	25,922,666	28,083	2%
Direct Cost A	37,866,000	60,094,207	48%	28,845,220	31,249	3%
Direct Cost B	37,866,000	111,094,207	48%	79,845,220	31,249	3%
Expanded	42,666,000	70,337,710	48%	33,762,101	36,576	3%
Wet/dry	141,746,000	63,441,995	48%	30,452,158	32,990	3%
Mixed a	279,866,000	178,053,123	48%	85,465,499	92,588	8%
Mixed b	279,866,000	199,315,562	48%	95,671,470	103,644	9%

	Existing Residential Costs	Cost of Commitment	Total Future Residential Costs	Total Future Households	Costs Per Household Future	Existing	Percent Change
Existing	0	23,112,845	23,112,845	956,717	0	26	0%
Committed	23,112,845	2,809,821	28,080,588	956,717	29	26	11%
Dir Cost A	23,112,845	5,732,375	31,003,141	956,717	32	26	23%
Dir Cost B	23,112,845	56,732,375	82,003,141	956,717	86	26	224%
Expanded	23,112,845	10,649,256	35,920,023	956,717	38	26	42%
Wet/dry	23,112,845	7,339,313	32,610,079	956,717	34	26	29%
Mixed a	23,112,845	62,352,655	87,623,421	956,717	92	26	247%
Mixed b	23,112,845	72,558,625	97,829,392	956,717	102	26	287%

Note: Household growth is used to show the effect of property assessment growth, but commercial/industrial assessment growth is not assumed to change the taxation split in the future. Moreover, new household growth will decrease the existing household cost for diversion, while future household growth beyond the period shown here, but still serviced by the systems is not included in the analysis.

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R SYSTEMS

Metro

MUNICIPAL TAXATION PER HOUSEHOLD

C-10

	Total Municipal Taxation (\$000)	Existing Cost of Diversion (\$000)	Annual Cost of Commitment (\$000)	Existing Diversion Cost as a Percent of Total Taxation	Future Diversion Cost as a Percent of Total Taxation
Existing	2,043,391	0	48,152	0%	2%
Committed	2,043,391	23,113	54,006	1%	4%
Dir Cost A	2,043,391	23,113	60,094	1%	4%
Dir Cost B	2,043,391	23,113	111,094	1%	7%
Expanded	2,043,391	23,113	70,338	1%	5%
Wet/dry	2,043,391	23,113	63,442	1%	4%
Mixed a	2,043,391	23,113	178,053	1%	10%
Mixed b	2,043,391	23,113	199,316	1%	11%

	Total Municipal Taxation Per Hshold	Cost of Diversion Commitment Per Hshold	Percent of Household Taxation
Existing	1,354	26	2%
Committed	1,354	29	2%
Dir Cost A	1,354	32	2%
Dir Cost B	1,354	86	6%
Expanded	1,354	38	3%
Wet/dry	1,354	34	3%
Mixed a	1,354	92	7%
Mixed b	1,354	102	8%

* Fees of \$100 per household are averaged over all households in the region.

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R SYSTEMS

Metro

MUNICIPAL DEBT

C-11

	Total Existing Debt (\$000)	Total Diversion Debt (\$000)	Percent Increase
Existing	1,050,386	7,090	1%
Committed	1,050,386	16,025	2%
Dir Cost A	1,050,386	37,866	4%
Dir Cost B	1,050,386	37,866	4%
Expanded	1,050,386	42,666	4%
Wet/dry	1,050,386	141,746	13%
Mixed a	1,050,386	279,866	27%
Mixed b	1,050,386	279,866	27%

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R SYSTEMS

Metro

DEBT PAYMENTS

C-12

	Existing Debt Charges (\$000)	Existing Expenditures (\$000)	Percent Existing Debt Charges / Expenditures	
Existing	230,000	5,283,169	4.4%	
Committed	230,000	5,283,169	4.4%	
Dir Cost A	230,000	5,283,169	4.4%	
Dir Cost B	230,000	5,283,169	4.4%	
Expanded	230,000	5,283,169	4.4%	
Wet/dry	230,000	5,283,169	4.4%	
Mixed a	230,000	5,283,169	4.4%	
Mixed b	230,000	5,283,169	4.4%	
	Future Commitment D-Charges (9%, 10yrs)	Future Debt Charges Committed Plus Existing	Percent Future Debt Charges to Expenditures	Increase
Existing	1,105	231,105	4.4%	0.0%
Committed	2,497	232,497	4.4%	0.0%
Dir Cost A	5,900	235,900	4.5%	0.1%
Dir Cost B	5,900	235,900	4.5%	0.1%
Expanded	6,648	236,648	4.5%	0.1%
Wet/dry	22,087	252,087	4.8%	0.4%
Mixed a	43,609	273,609	5.2%	0.8%
Mixed b	43,609	273,609	5.2%	0.8%

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R SYSTEMS

Metro

DEBT CAPACITY

C-13

	Existing Total Available Debt Capacity (9%, 5yrs)	Existing Debt	Current Remaining Debt Capacity	Percent Remaining	Committed Diversion	Percent Capacity Remaining After Committed
Existing	4,109,937	1,050,386	3,059,551	74%	7,090	74%
Committed	4,109,937	1,050,386	3,059,551	74%	16,025	74%
Dir Cost A	4,109,937	1,050,386	3,059,551	74%	37,866	74%
Dir Cost B	4,109,937	1,050,386	3,059,551	74%	37,866	74%
Expanded	4,109,937	1,050,386	3,059,551	74%	42,666	73%
Wet/dry	4,109,937	1,050,386	3,059,551	74%	141,746	71%
Mixed a	4,109,937	1,050,386	3,059,551	74%	279,866	68%
Mixed b	4,109,937	1,050,386	3,059,551	74%	279,866	68%

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R SYSTEMS

Metro

FUTURE GTA HOUSEHOLDS

C-14

	1992 Households	New Households	Total Future Households	Percent Increase
Existing	875,021	81,696	956,717	9%
Committed	875,021	81,696	956,717	9%
Dir Cost A	875,021	81,696	956,717	9%
Dir Cost B	875,021	81,696	956,717	9%
Expanded	875,021	81,696	956,717	9%
Wet/dry	875,021	81,696	956,717	9%
Mixed a	875,021	81,696	956,717	9%
Mixed b	875,021	81,696	956,717	9%

Source: Hardy Stevenson and Associates

REGION OF YORK

MOE 3Rs ANALYSIS			RESIDENTIAL SYSTEMS			
MUNICIPAL FINANCE EFFECTS ANALYSIS FOR 3R SYSTEMS			C-15			
			York			
	Gross Capital Costs (buildings, vehicles equipment, etc.)	Capital Funding Sources	Annual Operating Cost Estimates (Labour, Maint., Repair, etc.)	Added Operating Overhead Costs	Potential Annual Operating Cost Savings	Net Annual Levy (incl Annualized Capital Cost)
Existing	11,733,000		3,779,570 DIV RT 28%	1,208,638 32%	0	6,816,445
Committed	14,853,000		7,473,175 DIV RT 29%	1,868,294 25%	0	11,655,865
Direct Cost A	24,090,000		9,563,592 DIV RT 43%	2,390,898 25%	0	15,708,196
Direct Cost B	24,090,000		9,563,592 DIV RT 43%	2,390,898 25%	20,400,000	36,108,196
Expanded Blue	25,290,000		9,710,503 DIV RT 44%	2,427,626 25%	0	16,078,818
Wet / Dry	73,606,000		10,491,519 DIV RT 57%	2,622,880 25%	0	24,583,692
Mixed Waste a	106,690,000		19,942,463 DIV RT 59%	4,985,616 25%	0	41,552,524
Mixed Waste b	106,690,000		23,622,813 DIV RT 77%	5,905,703 25%	0	46,152,961

EFFECTS ANALYSIS OF 3R SYSTEMS

York

C-16

DIVERSION COSTS PER HOUSEHOLD

GROWTH

9%

	3R Capital	Annual Cost of Diversion	Residential Share of Annual Costs %	\$	Total Business Tax (\$000s)	Percent Business Tax
					77,948	
Existing	11,733,000	6,816,445	68%	4,635,183	2,181	3%
Committed	14,853,000	11,655,865	68%	7,925,988	3,730	4%
Dir Cost A	24,090,000	15,708,196	68%	10,681,574	5,027	6%
Dir Cost B	24,090,000	36,108,196	68%	31,081,574	5,027	6%
Expanded	25,290,000	16,078,818	68%	10,933,597	5,145	6%
Wet/dry	73,606,000	24,583,692	68%	16,716,911	7,867	9%
Mixed a	106,690,000	41,552,524	68%	28,255,716	13,297	16%
Mixed b	106,690,000	46,152,961	68%	31,384,014	14,769	17%

	Existing Residential Costs	Cost of Commitment	Total Future Residential Costs	Total Future Households	Costs Per Household Future	Existing	Percent Change
Existing	0	4,635,183	4,635,183	220,402	0	29	0%
Committed	4,635,183	3,290,805	9,610,498	220,402	44	29	52%
Dir Cost A	4,635,183	6,046,391	12,366,083	220,402	56	29	96%
Dir Cost B	4,635,183	26,446,391	32,766,083	220,402	149	29	418%
Expanded	4,635,183	6,298,414	12,618,106	220,402	57	29	100%
Wet/dry	4,635,183	12,081,728	18,401,420	220,402	83	29	191%
Mixed a	4,635,183	23,620,533	29,940,226	220,402	136	29	374%
Mixed b	4,635,183	26,748,831	33,068,523	220,402	150	29	423%

Note: Household growth is used to show the effect of property assessment growth, but commercial/industrial assessment growth is not assumed to change the taxation split in the future. Moreover, new household growth will decrease the existing household cost for diversion, while future household growth beyond the period shown here, but still serviced by the systems is not included in the analysis.

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R SYSTEMS

York

MUNICIPAL TAXATION PER HOUSEHOLD

C-17

	Total Municipal Taxation (\$000)	Existing Cost of Diversion (\$000)	Annual Cost of Commitment (\$000)	Existing Diversion Cost as a Percent of Total Taxation	Future Diversion Cost as a Percent of Total Taxation
Existing	252,590	0	6,816	0%	3%
Committed	252,590	4,635	11,656	2%	6%
Dir Cost A	252,590	4,635	15,708	2%	8%
Dir Cost B	252,590	4,635	36,108	2%	16%
Expanded	252,590	4,635	16,079	2%	8%
Wet/dry	252,590	4,635	24,584	2%	12%
Mixed a	252,590	4,635	41,553	2%	18%
Mixed b	252,590	4,635	46,153	2%	20%

	Total Municipal Taxation Per Hshold	Cost of Diversion Commitment Per Hshold	Percent of Household Taxation
Existing	1,223	29	2%
Committed	1,223	44	4%
Dir Cost A	1,223	56	5%
Dir Cost B*	1,223	149	12%
Expanded	1,223	57	5%
Wet/dry	1,223	83	7%
Mixed a	1,223	136	11%
Mixed b	1,223	150	12%

Note: Fees of \$100 per household are averaged over all households in the Region.

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R SYSTEMS**York****MUNICIPAL DEBT****C-18**

	Total Existing Debt (\$000)	Total Diversion Debt (\$000)	Percent Increase
Existing	133,458	11,733	9%
Committed	133,458	14,853	11%
Dir Cost A	133,458	24,090	18%
Dir Cost B	133,458	24,090	18%
Expanded	133,458	25,290	19%
Wet/dry	133,458	73,606	55%
Mixed a	133,458	106,690	80%
Mixed b	133,458	106,690	80%

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R SYSTEMS

York

DEBT PAYMENTS

C-19

	Existing Debt Charges (\$000)	Existing Expenditures (\$000)	Percent Existing Debt Charges / Expenditures	
Existing	15,244	592,853	2.6%	
Committed	15,244	592,853	2.6%	
Dir Cost A	15,244	592,853	2.6%	
Dir Cost B	15,244	592,853	2.6%	
Expanded	15,244	592,853	2.6%	
Wet/dry	15,244	592,853	2.6%	
Mixed a	15,244	592,853	2.6%	
Mixed b	15,244	592,853	2.6%	
	Future Commitment D-Charges (9%, 10 yrs)	Future Debt Charges Committed Plus Existing	Percent Future Debt Charges to Expenditures	Increase
Existing	1,828	17,072	2.9%	0.3%
Committed	2,314	17,558	3.0%	0.4%
Dir Cost A	3,754	18,998	3.2%	0.6%
Dir Cost B	3,754	18,998	3.2%	0.6%
Expanded	3,941	19,185	3.2%	0.7%
Wet/dry	11,469	26,713	4.5%	1.9%
Mixed a	16,624	31,868	5.4%	2.8%
Mixed b	16,624	31,868	5.4%	2.8%

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R SYSTEMS

York

DEBT CAPACITY

C-20

	Existing Total Available Debt Capacity (9%, 5yrs)	Existing Debt	Current Remaining Debt Capacity	Percent Remaining	Committed Diversion	Percent Capacity Remaining After Committed
Existing	461,198	133,458	327,740	71%	11,733	69%
Committed	461,198	133,458	327,740	71%	14,853	68%
Dir Cost A	461,198	133,458	327,740	71%	24,090	66%
Dir Cost B	461,198	133,458	327,740	71%	24,090	66%
Expanded	461,198	133,458	327,740	71%	25,290	66%
Wet/dry	461,198	133,458	327,740	71%	73,606	55%
Mixed a	461,198	133,458	327,740	71%	106,690	48%
Mixed b	461,198	133,458	327,740	71%	106,690	48%

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R SYSTEMS

York

FUTURE GTA HOUSEHOLDS

C-21

	1992 Households	New Households	Total Future Households	Percent Increase
Existing	161,654	58,748	220,402	36%
Committed	161,654	58,748	220,402	36%
Dir Cost A	161,654	58,748	220,402	36%
Dir Cost B	161,654	58,748	220,402	36%
Expanded	161,654	58,748	220,402	36%
Wet/dry	161,654	58,748	220,402	36%
Mixed a	161,654	58,748	220,402	36%
Mixed b	161,654	58,748	220,402	36%

Source: Hardy Stevenson and Associates

REGION OF PEEL

MOE 3Rs ANALYSIS			RESIDENTIAL SYSTEMS			
MUNICIPAL FINANCE EFFECTS ANALYSIS FOR 3R SYSTEMS			PEEL			
	Gross Capital Costs (buildings, vehicles equipment, etc.)	Capital Funding Sources	Annual Operating Cost Estimates (Labour, Overhead, Maint., Repair, etc.)	Added Operating Overhead Costs	Potential Annual Operating Cost Savings	Net Annual Levy (incl Annualized Capital Cost)
Existing	13,144,000		5,997,783 DIV RT 19%	1,463,034 30%	0	9,508,916
Existing / Committed	43,510,000		8,211,482 DIV RT 25%	2,463,445 30%	0	17,454,659
Direct Cost A	51,465,000		12,828,698 DIV RT 37%	3,207,174 25%	0	24,055,153
Direct Cost B	51,465,000		12,828,698 DIV RT 37%	3,207,174 25%	23,300,000	47,355,153
Expanded Blue	53,365,000		13,953,468 DIV RT 38%	3,488,367 25%	0	25,757,175
Wet / Dry	107,965,000		12,065,499 DIV RT 51%	3,016,375 25%	0	31,904,990
Mixed Waste a	154,965,000		33,075,802 DIV RT 55%	8,268,950 25%	0	65,491,412
Mixed Waste b	154,965,000		38,923,791 DIV RT 74%	9,730,948 25%	0	72,801,398

EFFECTS ANALYSIS OF 3R SYSTEMS

PEEL

C-23

DIVERSION COSTS PER HOUSEHOLD

GROWTH 30%

	3R Capital	Annual Cost of Diversion	Residential Share of Annual Costs %	\$	Total Business Tax (\$000s) 149,449	Percent Business Tax
Existing	13,144,000	9,508,916	62%	5,895,528	3,613	2%
Committed	43,510,000	17,454,659	62%	10,821,888	6,633	3%
Dir Cost A	51,465,000	24,055,153	62%	14,914,195	9,141	5%
Dir Cost B	51,465,000	47,355,153	62%	38,214,195	9,141	5%
Expanded	53,365,000	25,757,175	62%	15,969,448	9,788	5%
Wet/dry	107,965,000	31,904,990	62%	19,781,094	12,124	6%
Mixed a	154,965,000	65,491,412	62%	40,604,676	24,887	13%
Mixed b	154,965,000	72,801,398	62%	45,136,867	27,665	14%

	Existing Residential Costs	Cost of Commitment	Total Future Residential Costs	Total Future Households	Costs Per Household Future	Existing	Percent Change
Existing	0	5,895,528	5,895,528	309,272	0	25	0%
Committed	5,895,528	4,926,360	12,627,012	309,272	41	25	64%
Dir Cost A	5,895,528	9,018,667	16,719,318	309,272	54	25	117%
Dir Cost B	5,895,528	32,318,667	40,019,318	309,272	129	25	420%
Expanded	5,895,528	10,073,920	17,774,572	309,272	57	25	131%
Wet/dry	5,895,528	13,885,565	21,586,217	309,272	70	25	180%
Mixed a	5,895,528	34,709,147	42,409,799	309,272	137	25	451%
Mixed b	5,895,528	39,241,339	46,941,990	309,272	152	25	510%

Note: Household growth is used to show the effect of property assessment growth, but commercial/industrial assessment growth is not assumed to change the taxation split in the future. Moreover, new household growth will decrease the existing household cost for diversion, while future household growth beyond the period shown here, but still serviced by the systems is not included in the analysis.

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R SYSTEMS

PEEL

MUNICIPAL TAXATION PER HOUSEHOLD

C-24

	Total Municipal Taxation (\$000)	Existing Cost of Diversion (\$000)	Annual Cost of Commitment (\$000)	Existing Diversion Cost as a Percent of Total Taxation	Future Diversion Cost as a Percent of Total Taxation
Existing	392,710	0	9,509	0%	2%
Committed	392,710	5,896	17,455	2%	6%
Dir Cost A	392,710	5,896	24,055	2%	8%
Dir Cost B	392,710	5,896	47,355	2%	14%
Expanded	392,710	5,896	25,757	2%	8%
Wet/dry	392,710	5,896	31,905	2%	10%
Mixed a	392,710	5,896	65,491	2%	18%
Mixed b	392,710	5,896	72,801	2%	20%

	Total Municipal Taxation Per Hshold	Cost of Diversion Commitment Per Hshold	Percent of Household Taxation
Existing	1,337	25	2%
Committed	1,337	41	3%
Dir Cost A	1,337	54	4%
Dir Cost B*	1,337	129	10%
Expanded	1,337	57	4%
Wet/dry	1,337	70	5%
Mixed a	1,337	137	10%
Mixed b	1,337	152	11%

* Fees of \$100 per household are averaged over all households in the Region.

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R SYSTEMS

PEEL

MUNICIPAL DEBT

C-25

	Total Existing Debt (\$000)	Total Diversion Debt (\$000)	Percent Increase
Existing	146,408	13,144	9%
Committed	146,408	43,510	30%
Dir Cost A	146,408	51,465	35%
Dir Cost B	146,408	51,465	35%
Expanded	146,408	53,365	36%
Wet/dry	146,408	107,965	74%
Mixed a	146,408	154,965	106%
Mixed b	146,408	154,965	106%

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R SYSTEMS

PEEL

DEBT PAYMENTS

C-26

	Existing Debt Charges (\$000)	Existing Expenditures (\$000)	Percent Existing Debt Charges / Expenditures	
Existing	37,861	883,273	4.3%	
Committed	37,861	883,273	4.3%	
Dir Cost A	37,861	883,273	4.3%	
Dir Cost B	37,861	883,273	4.3%	
Expanded	37,861	883,273	4.3%	
Wet/dry	37,861	883,273	4.3%	
Mixed a	37,861	883,273	4.3%	
Mixed b	37,861	883,273	4.3%	
	Future Commitment D-Charges (9%, 10 yrs)	Future Debt Charges Committed Plus Existing	Percent Future Debt Charges to Expenditures	Increase
Existing	2,048	39,909	4.5%	0.2%
Committed	6,780	44,641	5.1%	0.8%
Dir Cost A	8,019	45,880	5.2%	0.9%
Dir Cost B	8,019	45,880	5.2%	0.9%
Expanded	8,315	46,176	5.2%	0.9%
Wet/dry	16,823	54,684	6.2%	1.9%
Mixed a	24,147	62,008	7.0%	2.7%
Mixed b	24,147	62,008	7.0%	2.7%

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R SYSTEMS

PEEL

DEBT CAPACITY

C-27

	Existing Total Available Debt Capacity (9%, 5 yrs)	Existing Debt	Current Remaining Debt Capacity	Percent Remaining	Committed Diversion	Percent Capacity Remaining After Committed
Existing	687,125	146,408	540,717	79%	13,144	77%
Committed	687,125	146,408	540,717	79%	43,510	72%
Dir Cost A	687,125	146,408	540,717	79%	51,465	71%
Dir Cost B	687,125	146,408	540,717	79%	51,465	71%
Expanded	687,125	146,408	540,717	79%	53,365	71%
Wet/dry	687,125	146,408	540,717	79%	107,965	63%
Mixed a	687,125	146,408	540,717	79%	154,965	56%
Mixed b	687,125	146,408	540,717	79%	154,965	56%

Source: Future Urban Research

EFFECTS ANALYSIS OF 3R SYSTEMS**PEEL****FUTURE GTA HOUSEHOLDS****C-28**

	1992 Households	New Households	Total Future Households	Percent Increase
Existing	236,775	72,497	309,272	31%
Committed	236,775	72,497	309,272	31%
Dir Cost A	236,775	72,497	309,272	31%
Dir Cost B	236,775	72,497	309,272	31%
Expanded	236,775	72,497	309,272	31%
Wet/dry	236,775	72,497	309,272	31%
Mixed a	236,775	72,497	309,272	31%
Mixed b	236,775	72,497	309,272	31%

Source: Hardy Stevenson and Associates

SCHEDULE D

Effects Tables

REGION OF DURHAM

Table D
System Effects Summary Table

DURHAM REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on Local Taxpayers	Total Increase in the Net General Municipal Levy (total Municipal taxation \$219.5 million)	Existing	\$7.2 million (3% increase) Low effect on local taxpayers
		Existing/Committed	\$12.8 million (6% increase) Medium effect on local taxpayers
		Direct Cost A	\$16.2 million (7% increase) High effect on local taxpayers
		Direct Cost B	\$32.4 million (15% increase) High effect on local taxpayers
		Expanded Blue Box	\$17.5 million (8% increase) High effect on local taxpayers
		Wet/Dry	\$21.1 million (10% increase) High effect on local taxpayers
		Mixed Waste A	\$33.5 million (15% increase) High effect on local taxpayers
		Mixed Waste B	\$35.8 million (16% increase) High effect on local taxpayers

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2, Impact Criteria. Potential for Impact on Provincial Treasury for rationale.

Table D
System Effects Summary Table

DURHAM REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on Local Taxpayers	Net General Municipal Levy, Adjusted for Commercial/Ind. Assessment (1992 tax/hsld=\$1,552)	Existing	\$1,558 (2% increase) Low effect on local taxpayers
		Existing/Committed	\$1,609 (4% increase) Medium effect on local taxpayers
		Direct Cost A	\$1,622 (4% increase) Medium effect on local taxpayers
		Direct Cost B	\$1,711 (10% increase) High effect on local taxpayers
		Expanded Blue Box	\$1,626 (5% increase) Medium effect on local taxpayers
		Wet/Dry	\$1,640 (6% increase) Medium effect on local taxpayers
		Mixed Waste A	\$1,687 (9% increase) High effect on local taxpayers
		Mixed Waste B	\$1,696 (9% increase) High effect on local taxpayers

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2. Impact Criteria. Potential for Impact on Provincial Treasury for rationale.

Table D
System Effects Summary Table

DURHAM REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on the Debt Burden of the Municipality	Amount of Debenture Debt (existing debt=\$71.9 m)	Existing	\$9.6 million (13% increase) High effect on municipal debt burden
		Existing/Committed	\$13.8 million (19% increase) High effect on municipal debt burden
		Direct Cost A	\$20.4 million (28% increase) High effect on municipal debt burden
		Direct Cost B	\$20.4 million (28% increase) High effect on municipal debt burden
		Expanded Blue Box	\$21.6 million (30% increase) High effect on municipal debt burden
		Wet/Dry	\$60.1 million (84% increase) High effect on municipal debt burden
		Mixed Waste A	\$88.3 million (123% increase) High effect on municipal debt burden
		Mixed Waste B	\$88.3 million (123% increase) High effect on municipal debt burden

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2, Impact Criteria, Potential for Impact on Provincial Treasury for rationale.

Table D
System Effects Summary Table

DURHAM REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on the Debt Burden of the Municipality	Amount of Debt Payments as a % of expenditure (existing exp=\$571.3 m)	Existing	\$1.5 million (.3% increase) Low effect on municipal expenditures
		Existing/Committed	\$2.1 million (.4% increase) Low effect on municipal expenditures
		Direct Cost A	\$3.1 million (.6% increase) Low effect on municipal expenditures
		Direct Cost B	\$3.1 million (.6% increase) Low effect on municipal expenditures
		Expanded Blue Box	\$3.3 million (.6% increase) Low effect on municipal expenditures
		Wet/Dry	\$9.3 million (1.6% increase) Low effect on municipal expenditures
		Mixed Waste A	\$13.7 million (2.4% increase) Low effect on municipal expenditures
		Mixed Waste B	\$13.7 million (2.4% increase) Low effect on municipal expenditures

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2. Impact Criteria. Potential for Impact on Provincial Treasury for rationale.

Table D
System Effects Summary Table

DURHAM REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on the Debt Burden of the Municipality	Amount of Debt Capacity Remaining (existing capacity=84%)	Existing	82% debt capacity remaining Low effect on debt capacity
		Existing/Committed	81% debt capacity remaining Low effect on debt capacity
		Direct Cost A	79% debt capacity remaining Medium effect on debt capacity
		Direct Cost B	79% debt capacity remaining Medium effect on debt capacity
		Expanded Blue Box	79% debt capacity remaining Medium effect on debt capacity
		Wet/Dry	70% debt capacity remaining High effect on municipal expenditures
		Mixed Waste A	64% debt capacity remaining High effect on municipal expenditures
		Mixed Waste B	64% debt capacity remaining High effect on municipal expenditures

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2. Impact Criteria. Potential for Impact on Provincial Treasury for rationale.

Table D
System Effects Summary Table

DURHAM REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on Municipal Reserve Funds	Total Amount of Reserve Funds (existing reserves=\$222m)	Existing	\$0 in additional reserves Low effect on reserves
		Existing/Committed	\$0 in additional reserves Low effect on reserves
		Direct Cost A	\$0 in additional reserves Low effect on reserves
		Direct Cost B	\$16.2 m in additional reserves High/positive effect on reserves
		Expanded Blue Box	\$0 in additional reserves Low effect on reserves
		Wet/Dry	\$0 in additional reserves Low effect on reserves
		Mixed Waste A	\$0 in additional reserves Low effect on reserves
		Mixed Waste B	\$0 in additional reserves Low effect on reserves

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2. Impact Criteria, Potential for Impact on Provincial Treasury for rationale.

Table D
System Effects Summary Table

DURHAM REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on Municipal Reserve Funds	Total Amount of Reserve Funds Per Household (existing reserves=\$222 m)	Existing	\$0 in additional reserves/hsld Low effect on reserves/hshld
		Existing/Committed	\$0 in additional reserves/hsld Low effect on reserves/hshld
		Direct Cost A	\$0 in additional reserves/hsld Low effect on reserves/hshld
		Direct Cost B	\$88.85 additional reserves/hsld High/positive effect on reserves
		Expanded Blue Box	\$0 in additional reserves/hsld Low effect on reserves/hshld
		Wet/Dry	\$0 in additional reserves/hsld Low effect on reserves/hshld
		Mixed Waste A	\$0 in additional reserves/hsld Low effect on reserves/hshld
		Mixed Waste B	\$0 in additional reserves/hsld Low effect on reserves/hshld

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2, Impact Criteria, Potential for Impact on Provincial Treasury for rationale.

Table D
System Effects Summary Table

DURHAM REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on Municipal Reserve Funds	Reserves as a percent of operating expenditures (existing %=39%)	Existing	reserves/operating exp. = 39% Low effect on reserves/hshld
		Existing/Committed	reserves/operating exp. = 39% Low effect on reserves/exp
		Direct Cost A	reserves/operating exp. = 39% Low effect on reserves/exp
		Direct Cost B	reserves/operating exp. = 42% Low effect on reserves/exp
		Expanded Blue Box	reserves/operating exp. = 39% Low effect on reserves/exp
		Wet/Dry	reserves/operating exp. = 39% Low effect on reserves/exp
		Mixed Waste A	reserves/operating exp. = 39% Low effect on reserves/exp
		Mixed Waste B	reserves/operating exp. = 39% Low effect on reserves/exp

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2. Impact Criteria. Potential for Impact on Provincial Treasury for rationale.

Table D
System Effects Summary Table

DURHAM REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on the Level of Municipal Services	Total municipal wages, salaries, materials and contract expenditures (1992 exp/hsld = \$4,057)	Existing	\$7.2 million (1% increase) Low effect on level of services
		Existing/Committed	\$12.8 million (2% increase) Low effect on level of services
		Direct Cost A	\$16.2 million (3% increase) Low effect on level of services
		Direct Cost B	\$16.2 million (3% increase) Low effect on level of services
		Expanded Blue Box	\$17.5 million (3% increase) Low effect on level of services
		Wet/Dry	\$21.1 million (4% increase) Medium effect on level of services
		Mixed Waste A	\$33.5 million (6% increase) Medium effect on level of services
		Mixed Waste B	\$35.8 million (6% increase) Medium effect on level of services

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2, Impact Criteria. Potential for Impact on Provincial Treasury for rationale.

Table D
System Effects Summary Table

DURHAM REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on the Level of Municipal Services	Current expenditure by department per household	All alternative systems	not affected by 3Rs
	Amount of Private sector funding	All alternative systems	not affected by 3Rs
Potential for Impact on Private sector Industries	Amount of Private sector costs	All alternative systems	not affected by 3Rs
	Amount of Private sector costs passed on through higher prices	All alternative systems	not affected by 3Rs

The Municipal Finance net effects analysis was undertaken in the absence of mitigation,
Refer to Chapter 2, Impact Criteria. Potential for Impact on Provincial Treasury for rationale.

Table D
System Effects Summary Table

DURHAM REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on Private sector Industries	Amount of Private sector costs financed through taxes, incentives & economies (current private sector business taxes = \$69.2 m)	Existing	\$2.2 million (3% increase) Low effect on private sector taxes
		Existing/Committed	\$3.9 million (6% increase) Medium effect on private sector taxes
		Direct Cost A	\$5.0 million (7% increase) High effect on private sector taxes
		Direct Cost B	\$5.0 million (7% increase) High effect on private sector taxes
		Expanded Blue Box	\$5.4 million (8% increase) High effect on private sector taxes
		Wet/Dry	\$6.5 million (9% increase) High effect on private sector taxes
		Mixed Waste A	\$10.3 million (15% increase) High effect on private sector taxes
		Mixed Waste B	\$11.1 million (16% increase) High effect on private sector taxes

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2, Impact Criteria. Potential for Impact on Provincial Treasury for rationale.

METROPOLITAN TORONTO

Table M
System Effects Summary Table

METRO REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on Local Taxpayers	Total Increase in the Net General Municipal Levy (total Municipal taxation \$2.0 billion)	Existing	\$48.1 million (2% increase) Low effect on local taxpayers
		Existing/Committed	\$54.0 million (3% increase) Low effect on local taxpayers
		Direct Cost A	\$60.0 million (3% increase) Low effect on local taxpayers
		Direct Cost B	\$111.0 million (5% increase) Medium effect on local taxpayers
		Expanded Blue Box	\$70.3 million (3% increase) Low effect on local taxpayers
		Wet/Dry	\$63.4 million (3% increase) Low effect on local taxpayers
		Mixed Waste A	\$178.0 million (9% increase) High effect on local taxpayers
		Mixed Waste B	\$199.3 million (10% increase) High effect on local taxpayers

The Municipal Finance net effects analysis was undertaken in the absence of mitigation,
Refer to Chapter 2, Impact Criteria. Potential for Impact on Provincial Treasury for rationale.

Table M
System Effects Summary Table

METRO REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on Local Taxpayers	Net General Municipal Levy, Adjusted for Commercial/Ind. Assessment (1992 tax/hslid=\$1,354)	Existing	\$1,380 (2% increase) Low effect on local taxpayers
		Existing/Committed	\$1,383 (2% increase) Low effect on local taxpayers
		Direct Cost A	\$1,386 (2% increase) Low effect on local taxpayers
		Direct Cost B	\$1,440 (6% increase) Medium effect on local taxpayers
		Expanded Blue Box	\$1,392 (3% increase) Low effect on local taxpayers
		Wet/Dry	\$1,388 (3% increase) Low effect on local taxpayers
		Mixed Waste A	\$1,446 (7% increase) High effect on local taxpayers
		Mixed Waste B	\$1,456 (8% increase) High effect on local taxpayers

The Municipal Finance net effects analysis was undertaken in the absence of mitigation,
Refer to Chapter 2, Impact Criteria. Potential for Impact on Provincial Treasury for rationale.

Table M
System Effects Summary Table

METRO REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on the Debt Burden of the Municipality	Amount of Debenture Debt (existing debt=\$1.0 b)	Existing	\$7.0 million (1% increase) Low effect on municipal debt burden
		Existing/Committed	\$16.0 million (2% increase) Low effect on municipal debt burden
		Direct Cost A	\$37.8 million (4% increase) Medium effect on municipal debt burden
		Direct Cost B	\$37.8 million (4% increase) Medium effect on municipal debt burden
		Expanded Blue Box	\$42.6 million (4% increase) Medium effect on municipal debt burden
		Wet/Dry	\$141.7 million (13% increase) High effect on municipal debt burden
		Mixed Waste A	\$279.8 million (27% increase) High effect on municipal debt burden
		Mixed Waste B	\$279.8 million (27% increase) High effect on municipal debt burden

The Municipal Finance net effects analysis was undertaken in the absence of mitigation,
Refer to Chapter 2. Impact Criteria, Potential for Impact on Provincial Treasury for rationale.

Table M
System Effects Summary Table

METRO REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on the Debt Burden of the Municipality	Amount of Debt Payments as a % of expenditure (existing exp=\$5.2 b)	Existing	\$1.1 million (0% increase) Low effect on municipal expenditures
		Existing/Committed	\$2.4 million (0% increase) Low effect on municipal expenditures
		Direct Cost A	\$5.9 million (.1% increase) Low effect on municipal expenditures
		Direct Cost B	\$5.9 million (.1% increase) Low effect on municipal expenditures
		Expanded Blue Box	\$6.6 million (.1% increase) Low effect on municipal expenditures
		Wet/Dry	\$22.0 million (.4% increase) Low effect on municipal expenditures
		Mixed Waste A	\$43.6 million (.8% increase) Low effect on municipal expenditures
		Mixed Waste B	\$43.6 million (.8% increase) Low effect on municipal expenditures

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2, Impact Criteria, Potential for Impact on Provincial Treasury for rationale.

Table M
System Effects Summary Table

METRO REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on the Debt Burden of the Municipality	Amount of Debt Capacity Remaining (existing capacity=74%)	Existing	74% debt capacity remaining Low effect on debt capacity
		Existing/Committed	74% debt capacity remaining Low effect on debt capacity
		Direct Cost A	74% debt capacity remaining Low effect on debt capacity
		Direct Cost B	74% debt capacity remaining Low effect on debt capacity
		Expanded Blue Box	73% debt capacity remaining Low effect on debt capacity
		Wet/Dry	71% debt capacity remaining Low effect on debt capacity
		Mixed Waste A	68% debt capacity remaining High effect on municipal expenditures
		Mixed Waste B	68% debt capacity remaining High effect on municipal expenditures

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2. Impact Criteria. Potential for Impact on Provincial Treasury for rationale.

Table M
System Effects Summary Table

METRO REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on Municipal Reserve Funds	Total Amount of Reserve Funds (existing reserves=\$968m)	Existing	\$0 in additional reserves Low effect on reserves
		Existing/Committed	\$0 in additional reserves Low effect on reserves
		Direct Cost A	\$0 in additional reserves Low effect on reserves
		Direct Cost B	\$51.0 m in additional reserves High/positive effect on reserves
		Expanded Blue Box	\$0 in additional reserves Low effect on reserves
		Wet/Dry	\$0 in additional reserves Low effect on reserves
		Mixed Waste A	\$0 in additional reserves Low effect on reserves
		Mixed Waste B	\$0 in additional reserves Low effect on reserves

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2. Impact Criteria. Potential for Impact on Provincial Treasury for rationale.

Table M
System Effects Summary Table

METRO REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on Municipal Reserve Funds	Total Amount of Reserve Funds Per Household (existing reserves=\$968 m)	Existing	\$0 in additional reserves/hshld Low effect on reserves/hshld
		Existing/Committed	\$0 in additional reserves/hshld Low effect on reserves/hshld
		Direct Cost A	\$0 in additional reserves/hshld Low effect on reserves/hshld
		Direct Cost B	\$53.31 additional reserves/hshld High/positive effect on reserves
		Expanded Blue Box	\$0 in additional reserves/hshld Low effect on reserves/hshld
		Wet/Dry	\$0 in additional reserves/hshld Low effect on reserves/hshld
		Mixed Waste A	\$0 in additional reserves/hshld Low effect on reserves/hshld
		Mixed Waste B	\$0 in additional reserves/hshld Low effect on reserves/hshld

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2. Impact Criteria. Potential for Impact on Provincial Treasury for rationale.

Table M
System Effects Summary Table

METRO REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on Municipal Reserve Funds	Reserves as a percent of operating expenditures (existing %=18%)	Existing	reserves/operating exp. = 18% Low effect on reserves/hshld
		Existing/Committed	reserves/operating exp. = 18% Low effect on reserves/exp
		Direct Cost A	reserves/operating exp. = 18% Low effect on reserves/exp
		Direct Cost B	reserves/operating exp. = 19% Low effect on reserves/exp
		Expanded Blue Box	reserves/operating exp. = 18% Low effect on reserves/exp
		Wet/Dry	reserves/operating exp. = 18% Low effect on reserves/exp
		Mixed Waste A	reserves/operating exp. = 18% Low effect on reserves/exp
		Mixed Waste B	reserves/operating exp. = 18% Low effect on reserves/exp

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2, Impact Criteria, Potential for Impact on Provincial Treasury for rationale.

Table M
System Effects Summary Table

METRO REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on the Level of Municipal Services	Total municipal wages, salaries, materials and contract expenditures (1992 exp/hsld = \$6,038)	Existing	\$48.1 million (1% increase) Low effect on level of services
		Existing/Committed	\$54.0 million (1% increase) Low effect on level of services
		Direct Cost A	\$60.0 million (1% increase) Low effect on level of services
		Direct Cost B	\$60.0 million (1% increase) Low effect on level of services
		Expanded Blue Box	\$70.3 million (1% increase) Low effect on level of services
		Wet/Dry	\$63.4 million (1% increase) Low effect on level of services
		Mixed Waste A	\$178.0 million (3% increase) Medium effect on level of services
		Mixed Waste B	\$199.3 million (3% increase) Medium effect on level of services

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2. Impact Criteria. Potential for Impact on Provincial Treasury for rationale.

Table M
System Effects Summary Table

METRO REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on the Level of Municipal Services	Current expenditures by department per household	All alternative systems	not affected by 3Rs
	Amount of Private sector funding	All alternative systems	not affected by 3Rs
	Amount of Private sector costs	All alternative systems	not affected by 3Rs
	Amount of Private sector costs passed on through higher prices	All alternative systems	not affected by 3Rs

The Municipal Finance net effects analysis was undertaken in the absence of mitigation,
Refer to Chapter 2, Impact Criteria, Potential for Impact on Provincial Treasury for rationale.

Table M
System Effects Summary Table

METRO REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on Private sector Industries	Amount of Private sector costs financed through taxes, incentives & economies (current private sector business taxes = \$1.0 b)	Existing	\$25.0 million (2% increase) Low effect on private sector taxes
		Existing/Committed	\$28.0 million (2% increase) Low effect on private sector taxes
		Direct Cost A	\$31.2 million (3% increase) Low effect on private sector taxes
		Direct Cost B	\$31.2 million (3% increase) Low effect on private sector taxes
		Expanded Blue Box	\$36.5 million (3% increase) Low effect on private sector taxes
		Wet/Dry	\$32.9 million (3% increase) Low effect on private sector taxes
		Mixed Waste A	\$92.5 million (8% increase) High effect on private sector taxes
		Mixed Waste B	\$103.6 million (9% increase) High effect on private sector taxes

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2, Impact Criteria, Potential for Impact on Provincial Treasury for rationale.

REGION OF YORK

Table Y
System Effects Summary Table

YORK REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on Local Taxpayers	Total Increase in the Net General Municipal Levy (total Municipal taxation \$252.5 million)	Existing	\$6.8 million (3% increase) Low effect on local taxpayers
		Existing/Committed	\$11.6 million (5% increase) Medium effect on local taxpayers
		Direct Cost A	\$15.7 million (6% increase) Medium effect on local taxpayers
		Direct Cost B	\$36.1 million (14% increase) High effect on local taxpayers
		Expanded Blue Box	\$16.0 million (6% increase) Medium effect on local taxpayers
		Wet/Dry	\$24.5 million (10% increase) High effect on local taxpayers
		Mixed Waste A	\$41.5 million (16% increase) High effect on local taxpayers
		Mixed Waste B	\$46.1 million (18% increase) High effect on local taxpayers

The Municipal Finance net effects analysis was undertaken in the absence of mitigation, Refer to Chapter 2, Impact Criteria. Potential for Impact on Provincial Treasury for rationale.

Table Y
System Effects Summary Table

YORK REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on Local Taxpayers	Net General Municipal Levy, Adjusted for Commercial/Ind. Assessment (1992 tax/hsld=\$1,223)	Existing	\$1,253 (2% increase) Low effect on local taxpayers
		Existing/Committed	\$1,267 (4% increase) Medium effect on local taxpayers
		Direct Cost A	\$1,279 (5% increase) Medium effect on local taxpayers
		Direct Cost B	\$1,372 (12% increase) High effect on local taxpayers
		Expanded Blue Box	\$1,280 (5% increase) Medium effect on local taxpayers
		Wet/Dry	\$1,306 (7% increase) High effect on local taxpayers
		Mixed Waste A	\$1,359 (11% increase) High effect on local taxpayers
		Mixed Waste B	\$1,373 (12% increase) High effect on local taxpayers

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2. Impact Criteria. Potential for Impact on Provincial Treasury for rationale.

Table Y
System Effects Summary Table

YORK REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on the Debt Burden of the Municipality	Amount of Debenture Debt (existing debt=\$133.4 m)	Existing	\$11.7 million (9% increase) High effect on municipal debt burden
		Existing/Committed	\$14.8 million (11% increase) High effect on municipal debt burden
		Direct Cost A	\$24.0 million (18% increase) High effect on municipal debt burden
		Direct Cost B	\$24.0 million (18% increase) High effect on municipal debt burden
		Expanded Blue Box	\$25.2 million (19% increase) High effect on municipal debt burden
		Wet/Dry	\$73.6 million (55% increase) High effect on municipal debt burden
		Mixed Waste A	\$106.6 million (80% increase) High effect on municipal debt burden
		Mixed Waste B	\$106.6 million (80% increase) High effect on municipal debt burden

The Municipal Finance net effects analysis was undertaken in the absence of mitigation,
Refer to Chapter 2, Impact Criteria, Potential for Impact on Provincial Treasury for rationale.

Table Y
System Effects Summary Table

YORK REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on the Debt Burden of the Municipality	Amount of Debt Payments as a % of expenditures (existing exp=\$592.8 m)	Existing	\$1.8 million (.3% increase) Low effect on municipal expenditures
		Existing/Committed	\$2.3 million (.4% increase) Low effect on municipal expenditures
		Direct Cost A	\$3.7 million (.6% increase) Low effect on municipal expenditures
		Direct Cost B	\$3.7 million (.6% increase) Low effect on municipal expenditures
		Expanded Blue Box	\$3.9 million (.7% increase) Low effect on municipal expenditures
		Wet/Dry	\$11.4 million (1.9% increase) Low effect on municipal expenditures
		Mixed Waste A	\$16.6 million (2.8% increase) Low effect on municipal expenditures
		Mixed Waste B	\$16.6 million (2.8% increase) Low effect on municipal expenditures

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2. Impact Criteria, Potential for Impact on Provincial Treasury for rationale.

Table Y
System Effects Summary Table

YORK REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on the Debt Burden of the Municipality	Amount of Debt Capacity Remaining (existing capacity=71%)	Existing	69% debt capacity remaining Low effect on debt capacity
		Existing/Committed	68% debt capacity remaining Low effect on debt capacity
		Direct Cost A	66% debt capacity remaining Medium effect on debt capacity
		Direct Cost B	66% debt capacity remaining Medium effect on debt capacity
		Expanded Blue Box	66% debt capacity remaining Medium effect on debt capacity
		Wet/Dry	55% debt capacity remaining High effect on municipal expenditures
		Mixed Waste A	48% debt capacity remaining High effect on municipal expenditures
		Mixed Waste B	48% debt capacity remaining High effect on municipal expenditures

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2, Impact Criteria, Potential for Impact on Provincial Treasury for rationale.

Table Y
System Effects Summary Table

YORK REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on Municipal Reserve Funds	Total Amount of Reserve Funds (existing reserves=\$290m)	Existing	\$0 in additional reserves Low effect on reserves
		Existing/Committed	\$0 in additional reserves Low effect on reserves
		Direct Cost A	\$0 in additional reserves Low effect on reserves
		Direct Cost B	\$20.4 m in additional reserves High/positive effect on reserves
		Expanded Blue Box	\$0 in additional reserves Low effect on reserves
		Wet/Dry	\$0 in additional reserves Low effect on reserves
		Mixed Waste A	\$0 in additional reserves Low effect on reserves
		Mixed Waste B	\$0 in additional reserves Low effect on reserves

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2. Impact Criteria. Potential for Impact on Provincial Treasury for rationale.

Table Y
System Effects Summary Table

YORK REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on Municipal Reserve Funds	Total Amount of Reserve Funds Per Household (existing reserves=\$222 m)	Existing	\$0 in additional reserves/hshld Low effect on reserves/hshld
		Existing/Committed	\$0 in additional reserves/hshld Low effect on reserves/hshld
		Direct Cost A	\$0 in additional reserves/hshld Low effect on reserves/hshld
		Direct Cost B	\$92.56 additional reserves/hshld High/positive effect on reserves
		Expanded Blue Box	\$0 in additional reserves/hshld Low effect on reserves/hshld
		Wet/Dry	\$0 in additional reserves/hshld Low effect on reserves/hshld
		Mixed Waste A	\$0 in additional reserves/hshld Low effect on reserves/hshld
		Mixed Waste B	\$0 in additional reserves/hshld Low effect on reserves/hshld

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2. Impact Criteria, Potential for Impact on Provincial Treasury for rationale.

Table Y
System Effects Summary Table

YORK REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on Municipal Reserve Funds	Reserves as a percent of operating expenditures (existing .%=49%)	Existing	reserves/operating exp. = 49% Low effect on reserves/hshld
		Existing/Committed	reserves/operating exp. = 49% Low effect on reserves/exp
		Direct Cost A	reserves/operating exp. = 439% Low effect on reserves/exp
		Direct Cost B	reserves/operating exp. = 52% Low effect on reserves/exp
		Expanded Blue Box	reserves/operating exp. = 49% Low effect on reserves/exp
		Wet/Dry	reserves/operating exp. = 49% Low effect on reserves/exp
		Mixed Waste A	reserves/operating exp. = 49% Low effect on reserves/exp
		Mixed Waste B	reserves/operating exp. = 49% Low effect on reserves/exp

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2. Impact Criteria. Potential for Impact on Provincial Treasury for rationale.

Table Y
System Effects Summary Table

YORK REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on the Level of Municipal Services	Total municipal wages, salaries, materials and contract expenditures (1992 exp/hsld = \$3,667)	Existing	\$6.8 million (1% increase) Low effect on level of services
		Existing/Committed	\$11.6 million (2% increase) Low effect on level of services
		Direct Cost A	\$15.7 million (3% increase) Low effect on level of services
		Direct Cost B	\$15.7 million (3% increase) Low effect on level of services
		Expanded Blue Box	\$16.0 million (3% increase) Low effect on level of services
		Wet/Dry	\$24.5 million (4% increase) Medium effect on level of services
		Mixed Waste A	\$41.5 million (7% increase) High effect on level of services
		Mixed Waste B	\$46.1 million (8% increase) High effect on level of services

The Municipal Finance net effects analysis was undertaken in the absence of mitigation,
Refer to Chapter 2, Impact Criteria, Potential for Impact on Provincial Treasury for rationale.

Table Y
System Effects Summary Table

YORK REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on the Level of Municipal Services	Current expenditures by department per household	All alternative systems	not affected by 3Rs
	Amount of Private sector funding	All alternative systems	not affected by 3Rs
	Amount of Private sector costs	All alternative systems	not affected by 3Rs
	Amount of Private sector costs passed on through higher prices	All alternative systems	not affected by 3Rs

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2, Impact Criteria, Potential for Impact on Provincial Treasury for rationale.

Table Y
System Effects Summary Table

YORK REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on Private sector Industries	Amount of Private sector costs financed through taxes, incentives & economies (current private sector business taxes = \$77.9 m)	Existing	\$2.1 million (3% increase) Low effect on private sector taxes
		Existing/Committed	\$3.7 million (4% increase) Medium effect on private sector taxes
		Direct Cost A	\$5.0 million (6% increase) Medium effect on private sector taxes
		Direct Cost B	\$5.0 million (6% increase) Medium effect on private sector taxes
		Expanded Blue Box	\$5.1 million (6% increase) High effect on private sector taxes
		Wet/Dry	\$7.8 million (9% increase) High effect on private sector taxes
		Mixed Waste A	\$13.2 million (16% increase) High effect on private sector taxes
		Mixed Waste B	\$14.7 million (17% increase) High effect on private sector taxes

The Municipal Finance net effects analysis was undertaken in the absence of mitigation, Refer to Chapter 2, Impact Criteria. Potential for Impact on Provincial Treasury for rationale.

REGION OF PEEL

Table P
System Effects Summary Table

PEEL REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on Local Taxpayers	Total Increase in the Net General Municipal Levy (total Municipal taxation \$392.7 million)	Existing	\$9.5 million (2% increase) Low effect on local taxpayers
		Existing/Committed	\$17.4 million (4% increase) Medium effect on local taxpayers
		Direct Cost A	\$24.0 million (6% increase) Medium effect on local taxpayers
		Direct Cost B	\$47.3 million (12% increase) High effect on local taxpayers
		Expanded Blue Box	\$25.7 million (7% increase) High effect on local taxpayers
		Wet/Dry	\$31.9 million (8% increase) High effect on local taxpayers
		Mixed Waste A	\$65.4 million (16% increase) High effect on local taxpayers
		Mixed Waste B	\$72.8 million (19% increase) High effect on local taxpayers

The Municipal Finance net effects analysis was undertaken in the absence of mitigation,
Refer to Chapter 2, Impact Criteria, Potential for Impact on Provincial Treasury for rationale.

Table P
System Effects Summary Table

PEEL REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on Local Taxpayers	Net General Municipal Levy, Adjusted for Commercial/Ind. Assessment (1992 tax/hsld=\$1,337)	Existing	\$1,362 (2% increase) Low effect on local taxpayers
		Existing/Committed	\$1,378 (3% increase) Low effect on local taxpayers
		Direct Cost A	\$1,391 (4% increase) Medium effect on local taxpayers
		Direct Cost B	\$1,466 (10% increase) High effect on local taxpayers
		Expanded Blue Box	\$1,394 (4% increase) Medium effect on local taxpayers
		Wet/Dry	\$1,407 (5% increase) Medium effect on local taxpayers
		Mixed Waste A	\$1,474 (10% increase) High effect on local taxpayers
		Mixed Waste B	\$1,489 (11% increase) High effect on local taxpayers

The Municipal Finance net effects analysis was undertaken in the absence of mitigation,
Refer to Chapter 2, Impact Criteria. Potential for Impact on Provincial Treasury for rationale.

Table P
System Effects Summary Table

PEEL REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on the Debt Burden of the Municipality	Amount of Debenture Debt (existing debt=\$146.4 m)	Existing	\$13.1 million (9% increase) High effect on municipal debt burden
		Existing/Committed	\$43.5 million (30% increase) High effect on municipal debt burden
		Direct Cost A	\$51.4 million (35% increase) High effect on municipal debt burden
		Direct Cost B	\$51.4 million (35% increase) High effect on municipal debt burden
		Expanded Blue Box	\$53.3 million (36% increase) High effect on municipal debt burden
		Wet/Dry	\$107.9 million (74% increase) High effect on municipal debt burden
		Mixed Waste A	\$154.9 million (106% increase) High effect on municipal debt burden
		Mixed Waste B	\$154.9 million (106% increase) High effect on municipal debt burden

The Municipal Finance net effects analysis was undertaken in the absence of mitigation,
Refer to Chapter 2. Impact Criteria. Potential for Impact on Provincial Treasury for rationale.

Table P
System Effects Summary Table

PEEL REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on the Debt Burden of the Municipality	Amount of Debt Payments as a % of expenditure (existing exp=\$883.2 m)	Existing	\$2.0 million (.2% increase) Low effect on municipal expenditures
		Existing/Committed	\$6.7 million (.8% increase) Low effect on municipal expenditures
		Direct Cost A	\$8.0 million (.9% increase) Low effect on municipal expenditures
		Direct Cost B	\$8.0 million (.9% increase) Low effect on municipal expenditures
		Expanded Blue Box	\$8.3 million (.9% increase) Low effect on municipal expenditures
		Wet/Dry	\$16.8 million (1.9% increase) Low effect on municipal expenditures
		Mixed Waste A	\$24.1 million (2.7% increase) Low effect on municipal expenditures
		Mixed Waste B	\$24.1 million (2.7% increase) Low effect on municipal expenditures

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2. Impact Criteria, Potential for Impact on Provincial Treasury for rationale.

Table P
System Effects Summary Table

PEEL REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on the Debt Burden of the Municipality	Amount of Debt Capacity Remaining (existing capacity=79%)	Existing	77% debt capacity remaining Low effect on debt capacity
		Existing/Committed	72% debt capacity remaining Low effect on debt capacity
		Direct Cost A	71% debt capacity remaining Medium effect on debt capacity
		Direct Cost B	71% debt capacity remaining Medium effect on debt capacity
		Expanded Blue Box	71% debt capacity remaining Medium effect on debt capacity
		Wet/Dry	63% debt capacity remaining High effect on municipal expenditures
		Mixed Waste A	56% debt capacity remaining High effect on municipal expenditures
		Mixed Waste B	56% debt capacity remaining High effect on municipal expenditures

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2. Impact Criteria, Potential for Impact on Provincial Treasury for rationale.

Table P
System Effects Summary Table

PEEL REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on Municipal Reserve Funds	Total Amount of Reserve Funds (existing reserves=\$811m)	Existing	\$0 in additional reserves Low effect on reserves
		Existing/Committed	\$0 in additional reserves Low effect on reserves
		Direct Cost A	\$0 in additional reserves Low effect on reserves
		Direct Cost B	\$23.3 m in additional reserves High/positive effect on reserves
		Expanded Blue Box	\$0 in additional reserves Low effect on reserves
		Wet/Dry	\$0 in additional reserves Low effect on reserves
		Mixed Waste A	\$0 in additional reserves Low effect on reserves
		Mixed Waste B	\$0 in additional reserves Low effect on reserves

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2. Impact Criteria, Potential for Impact on Provincial Treasury for rationale.

Table P
System Effects Summary Table

PEEL REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on Municipal Reserve Funds	Total Amount of Reserve Funds Per Household (existing reserves=\$811 m)	Existing	\$0 in additional reserves/hshld Low effect on reserves/hshld
		Existing/Committed	\$0 in additional reserves/hshld Low effect on reserves/hshld
		Direct Cost A	\$0 in additional reserves/hshld Low effect on reserves/hshld
		Direct Cost B	\$75.34 additional reserves/hshld High/positive effect on reserves
		Expanded Blue Box	\$0 in additional reserves/hshld Low effect on reserves/hshld
		Wet/Dry	\$0 in additional reserves/hshld Low effect on reserves/hshld
		Mixed Waste A	\$0 in additional reserves/hshld Low effect on reserves/hshld
		Mixed Waste B	\$0 in additional reserves/hshld

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2, Impact Criteria, Potential for Impact on Provincial Treasury for rationale.

Table P
System Effects Summary Table

PEEL REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on Municipal Reserve Funds	Reserves as a percent of operating expenditures (existing %=92%)	Existing	reserves/operating exp. = 92% Low effect on reserves/hshld
		Existing/Committed	reserves/operating exp. = 92% Low effect on reserves/exp
		Direct Cost A	reserves/operating exp. = 92% Low effect on reserves/exp
		Direct Cost B	reserves/operating exp. = 94% Low effect on reserves/exp
		Expanded Blue Box	reserves/operating exp. = 92% Low effect on reserves/exp
		Wet/Dry	reserves/operating exp. = 92% Low effect on reserves/exp
		Mixed Waste A	reserves/operating exp. = 92% Low effect on reserves/exp
		Mixed Waste B	reserves/operating exp. = 92% Low effect on reserves/exp

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2. Impact Criteria. Potential for Impact on Provincial Treasury for rationale.

Table P
System Effects Summary Table

PEEL REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on the Level of Municipal Services	Total municipal wages, salaries, materials and contract expenditures (1992 exp/hsld = \$3,730)	Existing	\$9.5 million (1% increase) Low effect on level of services
		Existing/Committed	\$17.4 million (2% increase) Low effect on level of services
		Direct Cost A	\$24.0 million (3% increase) Low effect on level of services
		Direct Cost B	\$24.0 million (3% increase) Low effect on level of services
		Expanded Blue Box	\$25.7 million (3% increase) Low effect on level of services
		Wet/Dry	\$31.9 million (4% increase) Medium effect on level of services
		Mixed Waste A	\$65.4 million (7% increase) High effect on level of services
		Mixed Waste B	\$72.8 million (8% increase) High effect on level of services

The Municipal Finance net effects analysis was undertaken in the absence of mitigation.
Refer to Chapter 2. Impact Criteria, Potential for Impact on Provincial Treasury for rationale.

Table P
System Effects Summary Table

PEEL REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on the Level of Municipal Services	Current expenditures by department per household	All alternative systems	not affected by 3Rs
Potential for Impact on Private sector Industries	Amount of Private sector funding	All alternative systems	not affected by 3Rs
	Amount of Private sector costs	All alternative systems	not affected by 3Rs
	Amount of Private sector costs passed on through higher prices	All alternative systems	not affected by 3Rs

The Municipal Finance net effects analysis was undertaken in the absence of mitigation,
Refer to Chapter 2, Impact Criteria, Potential for Impact on Provincial Treasury for rationale.

Table P
System Effects Summary Table

PEEL REGION			
CRITERIA	INDICATOR	RESIDENTIAL SYSTEM	NET EFFECTS BY CRITERION
Potential for Impact on Private sector Industries	Amount of Private sector costs financed through taxes, incentives & economics (current private sector business taxes = \$149.4 m)	Existing	\$3.6 million (2% increase) Low effect on private sector taxes
		Existing/Committed	\$6.6 million (3% increase) Low effect on private sector taxes
		Direct Cost A	\$9.1 million (5% increase) Medium effect on private sector taxes
		Direct Cost B	\$9.1 million (5% increase) Medium effect on private sector taxes
		Expanded Blue Box	\$9.7 million (5% increase) Medium effect on private sector taxes
		Wet/Dry	\$12.1 million (6% increase) Medium effect on private sector taxes
		Mixed Waste A	\$24.8 million (13% increase) High effect on private sector taxes
		Mixed Waste B	\$27.6 million (14% increase) High effect on private sector taxes

The Municipal Finance net effects analysis was undertaken in the absence of mitigation,
Refer to Chapter 2, Impact Criteria. Potential for Impact on Provincial Treasury for rationale.

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Uxbridge

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SCHEDULE F

List of Persons Contacted

List of Persons Contacted:**Region of Halton**

	D. Birkett, Director of Budgets and Finance
	M. Skora, Financial Analyst
	V. Lesnicki, Manager of Waste Reduction
	P. Torrence, Accounts Co-ordinator
	G. Woodburn, Manager of Public Works
Milton	P. Antonio, Engineering Department
	J. Matthews, Director of Public Works
	J. McQueen, Treasurer
Halton Hills	P. Sargeant, Recycling Co-ordinator/Admin. Assistant
	T. Drewlo, Manager of Public Works
Burlington	P. Anderson, Manager of Waste Management
	M. LaPorte, Manager of Revenue
	M. Fenn, City Manager
Oakville	M. Jones, Solid Waste Manager
	R. Green, Assistant Director of Public Works

Region of Durham

	P. Richards, Budgets and Economic Planning
	J. Clapp, Director of Finance
	P. Blyth, Senior Economist
	P. Watson, Manager of Works Department
Oshawa	A. Mylelelost, Director of Operations
	B. Simmons, Engineer
	C. Thomas, Admin. Assistant-Director of Finance
	C. Keil, Director of Finance
Ajax	F. Hull, Director of Engineering and Works
	E. Bellamy, Manager of Treasury
Clarington	W. Evans, Director of Public Works
	G. Aston, Technician, Public Works
Pickering	J. Walls, Treasurer
	S. Vokes, Director of Public Works
Whitby	M. Gale, Waste Analyst
	T. Rule, Manager of Operational Services
Scugog	K. Harper, Treasurer

Region of Peel

	L. Eason, Commissioner of Finance
	D. Markle, Commissioner of Public Works
	R. Hatton, Financial Policy Analyst
	G. Williams, Manager Waste Reduction and Recovery
	L. Morgan-Fraser Technical Analyst, Waste Reduction
	P. Kirby, Financial Policy Analyst

Caledon

B. Moore, Director of Public Works

S. Jones, Treasurer

Brampton

S. Stewart, Operations Supervisor, Public Works

Mississauga

T. Long, Recycling Co-ordinator

M. Masliwek, Manager Financial Services

Region of York

J. Pennachetti, Commissioner of Finance

L. MacMillan, Director of Solid Waste Management

J. Flewelling, Waste Management Engineer

Richmond Hill

B. Morrison, Solid Waste Manager

W. Bandow, Director of Works

S. Fairweather, Director of Finance

G. Maggott, Recycling Co-ordinator

Newmarket

R. Prentice, Municipal Clerk

L. Dean, Deputy Clerk

Georgina

J. Carr, Town Offices

S. Armstrong, Town Offices

East Gwillimbury

F. Reid, Treasurer

W. Hunt, Town Engineer

Aurora

P. Nog, Program Manager

B. Cribbett, Deputy Treasurer

Whitchurch-Stouffville P. Whitehouse, Public Works Department

E. Blackburn, Treasurer

Vaughan

E. Simmons, Waste Management Co-ordinator

Mr. Birkholder, Finance Department

C. Harris, Director of Finance

Markham

J. Anbinder, Administrative Co-ordinator

G. Wilson, Commissioner of Finance

N. Mortson, Director of Waste Management

D. Keliar, Commissioner Public Works

D. Douglas, Recycling Co-ordinator

King

D. Younge, Treasurer

K. Young, Director of Public Works

G. Watson, Operations Technologist

Uxbridge

W. Taylor, Clerk

R. Mitchell, Treasurer

Brock

M. Shier, Treasurer

Metro Toronto

A. Pollock, Works Department

C. Ling, Management Services

J. Pickard, Commissioner of Finance

	G. Patterson, Director of Fiancial Services
	A. Pollock, Manager of Waste Reduction
	T. Micheals, Waste Reduction
	S. Foster, Acting Assistant Mgr, Waste Reduction
Toronto	J. Warren, Commissioner of Environmental Services
	C. Alcantara, Cost Control Supervisor, Works Department
	D. Altman, Co-ordinator of Budgets, Planning and Policy
	S. Chamberland, Director of Budgets and Systems
	G. Clarke, Treasurer
York	C. Rodrigo, Clerk
	E. Benedetti-Clausser, Finance Department
	C. Hill, Finance Department
	E. French, Accounting & Budgets Co-ordinator
East York	E. Nichols, Treasurer
	D. Tonner, Recycling Co-ordiantor
	J. Thomas, Director of Operations
Etobicoke	H. Mohlmann, Recycling Manager
	A. Henry, Systems & Administration
Scarborough	M. Price, Commissioner of Works
	R. Gordon, Works Department
North York	L. Turner, Budgets Director
	D. Tyagi, Director of Solid Waste Management
OMMRI	J. Hruska
Waste Reduction Office	J. Lee
Municipal Affairs	A. Tossonyi, Economist - Municipal Finance Department
	E. Rojas, Economist - Municpal Finance Department

SCHEDULE G

Residential System Components

TABLE 1
REGION OF DURHAM
RESIDENTIAL SYSTEM COMPONENTS

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
Garbage Collection and Disposal <ul style="list-style-type: none"> ● Curbside collection of residential garbage from single family dwellings by municipal forces or contractors to municipalities ● Collection of residential garbage from multi-family units by municipal forces or private contractors ● Self haul of waste to landfills and transfer stations by residents ● Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection and Disposal <ul style="list-style-type: none"> ● Curbside collection of residential garbage from single family dwellings by municipal forces or contractors to municipalities ● Collection of residential garbage from multi-family units by municipal forces or private contractors ● Self haul of waste to landfills and transfer stations by residents ● Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection and Disposal <ul style="list-style-type: none"> ● Curbside collection of residential garbage from single family dwellings by municipal forces or contractors to municipalities ● <i>Direct cost system for garbage collection</i> ● Collection of residential garbage from multi-family units by municipal forces or private contractors ● Self haul of waste to landfills and transfer stations by residents ● Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection and Disposal <ul style="list-style-type: none"> ● Curbside collection of residential garbage from single family dwellings by municipal forces or contractors to municipalities ● Collection of residential garbage from multi-family units by municipal forces or private contractors ● Self haul of waste to landfills and transfer stations by residents ● Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection <ul style="list-style-type: none"> ● <i>Curbside collection of residential waste from single family dwellings in three streams by specially designed trucks by municipal forces or contractors to municipalities</i> ● <i>Collection of residential garbage from multi-family units in three streams by municipal forces or private contractors where feasible</i> ● Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads ● Self haul of waste to landfills and transfer stations by residents 	Garbage Collection and Disposal <ul style="list-style-type: none"> ● Curbside collection of residential garbage from single family dwellings by municipal forces or contractors to municipalities ● Collection of residential garbage from multi-family units by municipal forces or private contractors ● Self haul of waste to landfills and transfer stations by residents ● Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads

TABLE 1
REGION OF DURHAM
RESIDENTIAL SYSTEM COMPONENTS
(continued)

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
Residential Recycling and Collection <ul style="list-style-type: none"> ● Curbside collection of Blue Box materials from single family dwellings. Materials include ONP, OMG, telephone directories, OCC, PET, HDPE, glass, ferrous, aluminum ● Collection of bins of recyclables from multi-family units 	Residential Recycling and Collection <ul style="list-style-type: none"> ● <i>Expansion of curbside collection of Blue Box materials from single family dwellings in some municipalities to include all materials designated basic Blue Box waste and at least two materials designated as supplementary Blue Box waste in the 3Rs Regulations</i> ● Curbside collection of additional dry materials ● Recycling services at all multi-family buildings with 6 or more units (3Rs Regulations) ● Collection of bins of recyclables from multi-family units 	Residential Recycling and Collection <ul style="list-style-type: none"> ● Expansion of curbside collection of Blue Box materials from single family dwellings in some municipalities to include all materials designated basic Blue Box waste and at least two materials designated as supplementary Blue Box waste in the 3Rs Regulations ● Curbside collection of increased quantities of dry materials following implementation of Direct Cost system for garbage collection ● Recycling services at all multi-family buildings with 6 or more units ● Collection of bins of recyclables from multi-family units 	Residential Recycling and Collection <ul style="list-style-type: none"> ● Curbside collection of Expanded Blue Box materials including plastics, (PET, rigid plastic, bottles & tubes, film plastic, foam plastic and rigid trays); paper fibre (ONP, OCC, cardboard, polycoat, phone books, magazines and catalogues and mixed household paper); metal (steel and aluminum cans, aluminum trays and foil), clear and coloured glass and textiles ● Recycling services for full range of Expanded Blue Box materials at all multi-family buildings with 6 or more units ● Collection of bins of recyclables (collecting all Expanded Blue Box materials) from multi-family units ● Collection of bins of recyclables (collecting all Expanded Blue Box materials) from multi-family units 	Residential Recycling and Collection <ul style="list-style-type: none"> ● Provide carts to all single family households ● Separation of waste into three streams (wet, dry, and garbage) by the householder ● Expanded set of dry materials to be collected, including plastics, (PET, rigid plastic, bottles & tubes, film plastic, foam plastic and rigid trays); paper fibre (ONP, OCC, cardboard, polycoat, phone books, magazines and catalogues and mixed household paper); metal (steel and aluminum cans, aluminum trays and foil), clear and coloured glass and textiles ● Recycling services at all multi-family buildings with 6 or more units ● Large bins provided in the garbage management area of multi-family buildings. Residents will be encouraged to separate their waste into three separate bags 	Residential Recycling and Collection <ul style="list-style-type: none"> ● Expansion of curbside collection of Blue Box materials from single family dwellings in some municipalities to include all materials designated basic Blue Box waste and at least two materials designated as supplementary Blue Box waste in the 3Rs Regulations ● Curbside collection of additional dry materials ● Recycling services at all multi-family buildings with 6 or more units ● Collection of bins of recyclables from multi-family units

TABLE 1
REGION OF DURHAM
RESIDENTIAL SYSTEM COMPONENTS
(continued)

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> ● Drop-off depots for multi-family residents not serviced by recycling ● Drop-off depot for rural households ● Drop-off depots for recyclables (scrap metal, batteries, brush, drywall, HHW, tires, OCC and textiles) ● Depots located at transfer stations to provide recycling opportunities to self-haul generators 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> ● Drop-off depots for multi-family residents not serviced by recycling ● Drop-off depot for rural households ● Drop-off depots for recyclables (scrap metal, batteries, brush, drywall, HHW, tires, OCC and textiles) ● Depots located at transfer stations to provide recycling opportunities to self-haul generators 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> ● Drop-off depots for multi-family residents not serviced by recycling ● Drop-off depot for rural households ● Drop-off depots for recyclables (scrap metal, batteries, brush, drywall, HHW, tires, OCC and textiles) ● Depots located at transfer stations to provide recycling opportunities to self-haul generators 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> ● <i>Drop-off depots for multi-family residents not serviced by recycling (collecting all Expanded Blue Box materials)</i> ● <i>Drop-off depot for rural households (collecting all Expanded Blue Box materials)</i> ● Drop-off depots for recyclables (scrap metal, batteries, brush, drywall, HHW, tires, OCC and textiles) ● Depots located at transfer stations to provide recycling opportunities to self-haul generators 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> ● Drop-off depots for multi-family residents not serviced by recycling ● Drop-off depot for rural households ● Drop-off depots for recyclables (scrap metal, batteries, brush, drywall, HHW, tires, OCC and textiles) ● Depots located at transfer stations to provide recycling opportunities to self-haul generators 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> ● Drop-off depots for multi-family residents not serviced by recycling ● Drop-off depot for rural households ● Drop-off depots for recyclables (scrap metal, batteries, brush, drywall, HHW, tires, OCC and textiles) ● Depots located at transfer stations to provide recycling opportunities to self-haul generators
Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> ● Seasonal curbside collection of leaf and yard waste ● Drop-off depots for leaf and yard waste 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> ● Seasonal curbside collection of leaf and yard waste ● Drop-off depots for leaf and yard waste 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> ● Seasonal curbside collection of leaf and yard waste ● Drop-off depots for leaf and yard waste 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> ● Seasonal curbside collection of leaf and yard waste ● Drop-off depots for leaf and yard waste 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> ● <i>Collection of leaf and yard waste as part of three stream pick-up</i> ● <i>Separate brush collection</i> ● Drop-off depots for leaf and yard waste 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> ● Seasonal curbside collection of leaf and yard waste ● Drop-off depots for leaf and yard waste

TABLE 1
REGION OF DURHAM
RESIDENTIAL SYSTEM COMPONENTS
(continued)

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
Residential Household Composting <ul style="list-style-type: none"> • Backyard composter distribution programs (22,450 composters by end of 1992) • Limited community composting • Limited vermicomposting • 4,000 planned (cap budget) 	Residential Household Composting <ul style="list-style-type: none"> • Backyard composter distribution programs (26,450 composters by end of 1992) • Limited community composting • Limited vermicomposting 	Residential Household Composting <ul style="list-style-type: none"> • Door to door distribution of backyard composters to 80% of single family households • Large 3-bin composting units distributed to apartment and co-operative housing complexes • Promotion of vermicomposting to multi-family units • Promotion of community composting 	Residential Household Composting <ul style="list-style-type: none"> • Door to door distribution of backyard composters to 80% of single family households • Large 3-bin composting units distributed to apartment and co-operative housing complexes • Promotion of vermicomposting to multi-family units • Promotion of community composting 	Residential Household Composting <ul style="list-style-type: none"> • Door to door distribution of backyard composters to 80% of single family households • Large 3-bin composting units distributed to apartment and co-operative housing complexes • Promotion of vermicomposting to multi-family units • Promotion of community composting 	Residential Household Composting <ul style="list-style-type: none"> • Door to door distribution of backyard composters to 80% of single family households • Large 3-bin composting units distributed to apartment and co-operative housing complexes • Promotion of vermicomposting to multi-family units • Promotion of community composting
Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Permanent drop-off depots for household hazardous waste (HHW) at Brock West Landfill, and Scugog and Oshawa transfer stations • Toxic Taxi service (discontinued in Fall 1992) 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Permanent drop-off depots for household hazardous waste (HHW) at Brock West Landfill, and Scugog and Oshawa transfer stations 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Permanent drop-off depots for household hazardous waste (HHW) at Brock West Landfill, and Scugog and Oshawa transfer stations 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Permanent drop-off depots for household hazardous waste (HHW) at Brock West Landfill, and Scugog and Oshawa transfer stations 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods , etc.) <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Permanent drop-off depots for household hazardous waste (HHW) at Brock West Landfill, and Scugog and Oshawa transfer stations 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> • Special curbside collection of Christmas trees • Permanent drop-off depots for household hazardous waste (HHW) at Brock West Landfill, and Scugog and Oshawa transfer stations
Composting Facilities <ul style="list-style-type: none"> • Centralized windrow composting of leaf and yard waste 	Composting Facilities <ul style="list-style-type: none"> • Centralized windrow composting of leaf and yard waste 	Composting Facilities <ul style="list-style-type: none"> • Centralized windrow composting of leaf and yard waste 	Composting Facilities <ul style="list-style-type: none"> • Centralized windrow composting of leaf and yard waste 	Composting Facilities <ul style="list-style-type: none"> • Existing centralized windrow leaf and yard waste composting facilities may be closed • Central composting facility (in vessel) for composting of source separated household organics (wet stream) and leaf and yard waste 	Composting Facilities <ul style="list-style-type: none"> • Centralized windrow composting of leaf and yard waste • New mixed waste processing and composting facility

TABLE 1
REGION OF DURHAM
RESIDENTIAL SYSTEM COMPONENTS
(continued)

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
Reuse Centres and Activities <ul style="list-style-type: none"> ● Goodwill trailers throughout region ● Attended donation centre at Riston transfer station 	Reuse Centres and Activities <ul style="list-style-type: none"> ● Goodwill trailers throughout region ● Attended donation centre at Riston transfer station 	Reuse Centres and Activities <ul style="list-style-type: none"> ● Goodwill trailers throughout region ● Attended donation centre at Riston transfer station 	Reuse Centres and Activities <ul style="list-style-type: none"> ● Goodwill trailers throughout region ● Attended donation centre at Riston transfer station 	Reuse Centres and Activities <ul style="list-style-type: none"> ● Goodwill trailers throughout region ● Attended donation centre at Riston transfer station 	Reuse Centres and Activities <ul style="list-style-type: none"> ● Goodwill trailers throughout region ● Attended donation centre at Riston transfer station
MRFs <ul style="list-style-type: none"> ● One processing centre (MRF) for dry recyclables collected from the residential (and minor amounts from the commercial/ institutional) sector. Owned by the municipality and operated by municipal staff ● Construct new MRF to handle 20-year requirements ● Close existing MRF when new MRF constructed 	MRFs <ul style="list-style-type: none"> ● One processing centre (MRF) for dry recyclables collected from the residential (and minor amounts from the commercial/ institutional) sector. Owned by the municipality and operated by municipal staff ● Improvements/expansion to the existing regional MRF ● Construct new MRF to handle 20-year requirements ● Close existing MRF when new MRF constructed 	MRFs <ul style="list-style-type: none"> ● One processing centre (MRF) for dry recyclables collected from the residential (and minor amounts from the commercial/ institutional) sector. Owned by the municipality and operated by municipal staff ● Construct new MRF, to process larger stream of dry recyclables ● Close existing MRF when new MRF constructed 	MRFs <ul style="list-style-type: none"> ● One processing centre (MRF) for dry recyclables collected from the residential (and minor amounts from the commercial/ institutional) sector. Owned by the municipality and operated by municipal staff ● Construct new MRF, to process larger stream of dry recyclables ● Close existing MRF when new MRF constructed 	MRFs <ul style="list-style-type: none"> ● Processing centre (MRF) for dry recyclables collected from the residential (and minor amounts from the commercial/institutional) sector. Owned by the municipality and operated by municipal or contractors' staff ● Construct new MRF, to process larger dry stream of recyclables ● Close existing MRF when new MRF constructed 	MRFs <ul style="list-style-type: none"> ● One processing centre (MRF) for dry recyclables collected from the residential (and minor amounts from the commercial/ institutional) sector. Owned by the municipality and operated by municipal staff ● Construct new MRF to process larger stream of dry recyclables ● Close existing MRF when new MRF constructed
Residential Promotion and Education <ul style="list-style-type: none"> ● 3Rs promotion and education program, focused on the residential sector, including home composting video ● Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements etc. 	Residential Promotion and Education <ul style="list-style-type: none"> ● 3Rs promotion and education program, focused on the residential sector, including home composting video ● Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements etc. 	Residential Promotion and Education <ul style="list-style-type: none"> ● 3Rs promotion and education program, focused on the residential sector, including home composting video ● Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements etc. ● 3Rs promotion and education program, focused on source reduction, pre-cycling, reuse and recycling ● Promotion/education program on direct cost system 	Residential Promotion and Education <ul style="list-style-type: none"> ● 3Rs promotion and education program, focused on the residential sector, including home composting video ● Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements etc. ● 3Rs promotion and education program, focused on source reduction, pre-cycling, reuse and recycling ● Promotion/education program on Expanded Blue Box program 	Residential Promotion and Education <ul style="list-style-type: none"> ● 3Rs promotion and education program, focused on the residential sector, including home composting video ● Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements etc. ● 3Rs promotion and education program, focused on source reduction, pre-cycling, reuse and recycling ● Promotion/education program for wet/dry system 	Residential Promotion and Education <ul style="list-style-type: none"> ● 3Rs promotion and education program, focused on the residential sector, including home composting video ● Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements etc. ● 3Rs promotion and education program, focused on source reduction, pre-cycling, reuse and recycling

TABLE 2
METRO TORONTO
RESIDENTIAL SYSTEM COMPONENTS

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings • Collection of residential garbage from multi-family units by municipal forces or private contractors • Self-haul of waste to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings • Collection of residential garbage from multi-family units by municipal forces or private contractors • Self-haul of waste to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings • Collection of residential garbage from multi-family units by municipal forces or private contractors • <i>Direct cost system for garbage collection from households currently serviced by municipal forces</i> • Self-haul of waste to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings • Collection of residential garbage from multi-family units by municipal forces or private contractors • Self-haul of waste to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection and Disposal <ul style="list-style-type: none"> • <i>Curbside collection of residential waste from single family dwellings in three streams by specially designed trucks</i> • <i>Collection of residential garbage from multi-family units in three streams by municipal forces or private contractors, where feasible</i> • Self-haul of waste to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings • Collection of residential garbage from multi-family units by municipal forces or private contractors • Self-haul of waste to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads

TABLE 2
METRO TORONTO
RESIDENTIAL SYSTEM COMPONENTS
(continued)

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
Residential Recycling and Collection <ul style="list-style-type: none"> • Curbside collection of Blue Box materials from single family dwellings and some apartment buildings. Typical materials include ONP, OCC, telephone directories, magazines, PET, HDPE, glass, ferrous, aluminum • Collection of bins of recyclables from multi-family units 	Residential Recycling and Collection <ul style="list-style-type: none"> • <i>Expansion of curbside collection of Blue Box materials from single family dwellings in some municipalities to include all materials designated basic Blue Box waste and at least two materials designated as supplementary Blue Box waste in the 3Rs Regulations</i> • <i>Curbside collection of additional dry materials</i> • <i>Recycling services at all multi-family buildings with 6 or more units (3R's Regulations)</i> • <i>Collection of bins of recyclables from multi-family units</i> • <i>Some additional recycling service to multi-family units</i> 	Residential Recycling and Collection <ul style="list-style-type: none"> • Expansion of curbside collection of Blue Box materials from single family dwellings in some municipalities to include all materials designated basic Blue Box waste and at least two materials designated as supplementary Blue Box waste in the 3Rs Regulations • Curbside collection of additional dry materials • Recycling services at all multi-family buildings with 6 or more units • Collection of bins of recyclables from multi-family units 	Residential Recycling and Collection <ul style="list-style-type: none"> • <i>Curbside collection of Expanded Blue Box materials including plastics, (PET, rigid plastic, bottles & tubes, film plastic, foam plastic and rigid trays); paper fibre (ONP, OCC, boxboard, polycoat, phone books, magazines and catalogues and mixed household paper); metal (steel and aluminum cans, aluminum trays and foil), clear and coloured glass and textiles</i> • <i>Recycling services for full range of Expanded Blue Box materials at all multi-family buildings with 6 or more units</i> • <i>Collection of bins of recyclables (collecting all Expanded Blue Box materials) from multi-family units</i> • <i>Collection of bins of recyclables (collecting all expanded blue box materials) from multi-family units</i> 	Residential Recycling and Collection <ul style="list-style-type: none"> • <i>Provide carts to all single family</i> • <i>Separation of waste into three streams (wet, dry and garbage) by the householder</i> • <i>Expanded set of dry materials to be collected, including plastics, (PET, rigid plastic, bottles & tubes, film plastic, foam plastic and rigid trays); paper fibre (ONP, OCC, boxboard, polycoat, phone books, magazines and catalogues and mixed household paper); metal (steel and aluminum cans, aluminum trays and foil), clear and coloured glass and textiles</i> • <i>Recycling services at all multi-family buildings with 6 or more units</i> • <i>Large bins provided in the garbage management area of multi-family buildings, where space permits. Residents will be encouraged to separate their waste into three separate bags</i> 	Residential Recycling and Collection <ul style="list-style-type: none"> • Expansion of curbside collection of Blue Box materials from single family dwellings in some municipalities to include all materials designated basic Blue Box waste and at least two materials designated as supplementary Blue Box waste in the 3Rs Regulations • Curbside collection of additional dry materials • Recycling services at all multi-family buildings with 6 or more units • Collection of bins of recyclables from multi-family units • Some additional recycling service to multi-family units

TABLE 2
METRO TORONTO
RESIDENTIAL SYSTEM COMPONENTS
(continued)

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> Drop-off depot for dry recyclables (including all banned materials) at landfills Depots located at transfer stations to provide recycling opportunities to self-haul generators Igloos and domes provide opportunities to recycle in public areas Drop-off depots for multi-family residents not serviced by recycling Depots for voluntary recycling by residents (e.g.Scarsborough) 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> Drop-off depot for dry recyclables (including all banned materials) at landfills Depots located at transfer stations to provide recycling opportunities to self-haul generators Igloos and domes provide opportunities to recycle in public areas Drop-off depots for multi-family residents not serviced by recycling Depots for voluntary recycling by residents (e.g.Scarsborough) 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> Drop-off depot for dry recyclables (including all banned materials) at landfills Depots located at transfer stations to provide recycling opportunities to self-haul generators Igloos and domes provide opportunities to recycle in public areas Drop-off depots for multi-family residents not serviced by recycling Depots for voluntary recycling by residents (e.g.Scarsborough) 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> Drop-off depot for dry recyclables (including all banned materials) at landfills Depots located at transfer stations to provide recycling opportunities to self-haul generators (<i>collecting all Expanded Blue Box materials</i>) Igloos and domes provide opportunities to recycle in public areas Drop-off depots for multi-family residents not serviced by recycling, for full range of <i>Expanded Blue Box materials</i> Depots for voluntary recycling by residents (e.g.Scarsborough) 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> Drop-off depot for dry recyclables (including all banned materials) at landfills Depots located at transfer stations to provide recycling opportunities to self-haul generators (<i>collecting all Expanded Blue Box materials</i>) Igloos and domes provide opportunities to recycle in public areas Drop-off depots for multi-family residents not serviced by recycling Depots for voluntary recycling by residents (e.g.Scarsborough) 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> Drop-off depot for dry recyclables (including all banned materials) at landfills Depots located at transfer stations to provide recycling opportunities to self-haul generators Igloos and domes provide opportunities to recycle in public areas Drop-off depots for multi-family residents not serviced by recycling Depots for voluntary recycling by residents (e.g.Scarsborough)
Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> Seasonal curbside collection of leaf and yard waste 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> Seasonal curbside collection of leaf and yard waste <i>New leaf and yard waste bunkers at transfer stations (1994 capital budget)</i> 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> Seasonal curbside collection of leaf and yard waste New leaf and yard waste bunkers at transfer stations (1994 capital budget) 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> Seasonal curbside collection of leaf and yard waste New leaf and yard waste bunkers at transfer stations (1994 capital budget) 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> <i>Collection of leaf and yard waste as part of three stream pick-up</i> <i>Separate brush collection</i> New leaf and yard waste bunkers at transfer stations (1994 capital budget) 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> Seasonal curbside collection of leaf and yard waste New leaf and yard waste bunkers at transfer stations (1994 capital budget)

TABLE 2
METRO TORONTO
RESIDENTIAL SYSTEM COMPONENTS
(continued)

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
Residential Household Composting <ul style="list-style-type: none"> ● Backyard composter distribution programs (105,000 units to date) ● Sale of 3-bin units to some multi-family dwellings at \$150 each (25 units by end of 1992) ● Limited community composting ● Limited vermicomposting 	Residential Household Composting <ul style="list-style-type: none"> ● Backyard composter distribution programs (105,000 units to date) ● <i>Distribution of an additional 15,000 to 20,000 backyard composters, to bring the total distributed by Metro to between 120,000 and 125,000</i> ● Sale of 3-bin units to some multi-family dwellings at \$150 each (25 units by end of 1992) ● Additional community composting ● Additional vermicomposting 	Residential Household Composting <ul style="list-style-type: none"> ● <i>Door to door distribution of backyard composters to 80% of single family households</i> ● <i>Large 3-bin composting units distributed to apartment and co-operative housing complexes</i> ● <i>Promotion of vermicomposting to multi-family units</i> ● <i>Promotion of community composting</i> 	Residential Household Composting <ul style="list-style-type: none"> ● <i>Door to door distribution of backyard composters to 80% of single family households</i> ● <i>Large 3-bin composting units distributed to apartment and co-operative housing complexes</i> ● <i>Promotion of vermicomposting to multi-family units</i> ● <i>Promotion of community composting</i> 	Residential Household Composting <ul style="list-style-type: none"> ● <i>Door to door distribution of backyard composters to 80% of single family households</i> ● <i>Large 3-bin composting units distributed to apartment and co-operative housing complexes on a voluntary basis</i> ● <i>Promotion of vermicomposting to multi-family units</i> ● <i>Promotion of community composting</i> 	Residential Household Composting <ul style="list-style-type: none"> ● <i>Door to door distribution of backyard composters to 80% of single family households</i> ● <i>Large 3-bin composting units distributed to apartment and co-operative housing complexes</i> ● <i>Promotion of vermicomposting to multi-family units</i> ● <i>Promotion of community composting</i>
Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> ● Special curbside collections of Christmas trees ● Curbside collection of white goods ● Drop-off depots for white goods ● Ten (10) permanent drop-off depots for HHW (8 in Metro, 1 at Keele Valley Landfill, one at Brock Road West landfill.) ● Two Toxic Taxis 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> ● Special curbside collections of Christmas trees ● Curbside collection of white goods ● Drop-off depots for white goods ● Ten (10) permanent drop-off depots for HHW (8 in Metro, 1 at Keele Valley Landfill, one at Brock Road West landfill.) ● Two Toxic Taxis 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> ● Special curbside collections of Christmas trees ● Curbside collection of white goods ● Drop-off depots for white goods ● Ten (10) permanent drop-off depots for HHW (8 in Metro, 1 at Keele Valley Landfill, one at Brock Road West landfill.) ● Two Toxic Taxis 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> ● Special curbside collections of Christmas trees ● Curbside collection of white goods ● Drop-off depots for white goods ● Ten (10) permanent drop-off depots for HHW (8 in Metro, 1 at Keele Valley Landfill, one at Brock Road West landfill.) ● Two Toxic Taxis 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> ● Special curbside collections of Christmas trees ● Curbside collection of white goods ● Drop-off depots for white goods ● Ten (10) permanent drop-off depots for HHW (8 in Metro, 1 at Keele Valley Landfill, one at Brock Road West landfill.) ● Two Toxic Taxis 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods, etc.) <ul style="list-style-type: none"> ● Special curbside collections of Christmas trees ● Curbside collection of white goods ● Drop-off depots for white goods ● Ten (10) permanent drop-off depots for HHW (8 in Metro, 1 at Keele Valley Landfill, one at Brock Road West landfill.) ● Two Toxic Taxis

TABLE 2
METRO TORONTO
RESIDENTIAL SYSTEM COMPONENTS
(continued)

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
Composting Facilities <ul style="list-style-type: none"> Centralized windrow composting of leaf and yard waste in North York (3 sites), Scarborough (1 site), Etobicoke (1 site), and at Keele Valley (Metro operated Avondale Site) 	Composting Facilities <ul style="list-style-type: none"> Centralized windrow composting of leaf and yard waste in North York (3 sites), Scarborough (1 site), Etobicoke (1 site), and at Keele Valley (Metro operated Avondale Site) 	Composting Facilities <ul style="list-style-type: none"> Centralized windrow composting of leaf and yard waste in North York (3 sites), Scarborough (1 site), Etobicoke (1 site), and at Keele Valley (Metro operated Avondale Site) 	Composting Facilities <ul style="list-style-type: none"> Centralized windrow composting of leaf and yard waste in North York (3 sites), Scarborough (1 site), Etobicoke (1 site), and at Keele Valley (Metro operated Avondale Site) 	Composting Facilities <ul style="list-style-type: none"> Existing centralized windrow leaf and yard waste composting facilities may be closed One new central composting facility (in-vessel) with a capacity to process all household organics and leaf and yard wastes 	Composting Facilities <ul style="list-style-type: none"> Centralized windrow composting of leaf and yard waste in North York (3 sites), Scarborough (1 site), Etobicoke (1 site), and at Keele Valley (Metro operated Avondale Site) Two new mixed waste processing and composting facilities
Reuse Centres and Activities <ul style="list-style-type: none"> Goods exchange days Charitable reuse centres run by social service organizations (Goodwill, Salvation Army, etc.) Food reuse organization (such as Second Harvest) Re-Uze Centre in Scarborough 	Reuse Centres and Activities <ul style="list-style-type: none"> Goods exchange days Charitable reuse centres run by social service organizations (Goodwill, Salvation Army, etc.) Food reuse organization (such as Second Harvest) Re-Uze Centre in Scarborough 	Reuse Centres and Activities <ul style="list-style-type: none"> Goods exchange days Charitable reuse centres run by social service organizations (Goodwill, Salvation Army, etc.) Food reuse organization (such as Second Harvest) Re-Uze Centre in Scarborough 	Reuse Centres and Activities <ul style="list-style-type: none"> Goods exchange days Charitable reuse centres run by social service organizations (Goodwill, Salvation Army, etc.) Food reuse organization (such as Second Harvest) Re-Uze Centre in Scarborough 	Reuse Centres and Activities <ul style="list-style-type: none"> Goods exchange days Charitable reuse centres run by social service organizations (Goodwill, Salvation Army, etc.) Food reuse organization (such as Second Harvest) Re-Uze Centre in Scarborough 	Reuse Centres and Activities <ul style="list-style-type: none"> Goods exchange days Charitable reuse centres run by social service organizations (Goodwill, Salvation Army, etc.) Food reuse organization (such as Second Harvest) Re-Uze Centre in Scarborough

TABLE 2
METRO TORONTO
RESIDENTIAL SYSTEM COMPONENTS
(continued)

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
MRFs <ul style="list-style-type: none"> • QUNO MRF on Commissioners Street, which processed fibres and container materials under contract to Metro in 1992. Operation changed in 1993 to process fibres only • CRinc MRF on Commissioners Street, which started operation in May 1992. It processes only container materials (plastic, metals, and glass). The facility is owned by Metro, and is operated under contract by CRinc • Dufferin Street MRF is owned by Metro and operated by QUNO • One new MRF (to meet 20 year requirement) 	MRFs <ul style="list-style-type: none"> • QUNO MRF on Commissioners Street, which processes fibres • CRinc MRF on Commissioners Street processes container materials (plastic, metals, and glass). The facility is owned by Metro, and is operated under contract by CRinc. • Dufferin Street MRF is owned by Metro and operated by QUNO • One new MRF for processing dry recyclables to meet 20 year requirements 	MRFs <ul style="list-style-type: none"> • QUNO MRF on Commissioners Street, which processes fibres • CRinc MRF on Commissioners Street processes container materials (plastic, metals, and glass). The facility is owned by Metro, and is operated under contract by CRinc. • Dufferin Street MRF is owned by Metro and operated by QUNO • One new MRF for processing dry recyclables (to meet 20 year requirement) 	MRFs <ul style="list-style-type: none"> • QUNO MRF on Commissioners Street, which processes fibres • CRinc MRF on Commissioners Street processes container materials (plastic, metals, and glass). The facility is owned by Metro, and is operated under contract by CRinc. • Dufferin Street MRF is owned by Metro and operated by QUNO • One new MRF for processing dry recyclables (to meet 20 year requirement) 	MRFs <ul style="list-style-type: none"> • QUNO MRF on Commissioners Street, which processes fibres • CRinc MRF on Commissioners Street processes container materials (plastic, metals, and glass). The facility is owned by Metro, and is operated under contract by CRinc. • Dufferin Street MRF is owned by Metro and operated by QUNO • One new MRF for processing dry recyclables (to meet 20 year requirement) 	MRFs <ul style="list-style-type: none"> • QUNO MRF on Commissioners Street, which processes fibres • CRinc MRF on Commissioners Street processes container materials (plastic, metals, and glass). The facility is owned by Metro, and is operated under contract by CRinc. • Dufferin Street MRF is owned by Metro and operated by QUNO • One new MRF for processing dry recyclables (to meet 20 year requirement)

TABLE 2
METRO TORONTO
RESIDENTIAL SYSTEM COMPONENTS
(continued)

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
Residential Promotion and Education <ul style="list-style-type: none"> ● Extensive promotion and education campaign on composting by the residential sector, which includes the Master Composter program operated for Metro by RCO, a compost information hotline, radio and newspaper advertisements, and backyard composting manuals in many languages ● Extensive 3Rs promotion and education program, focused on the residential sector, which includes publishing "Your Guide to Reduction and Recycling in Metropolitan Toronto" ● Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements etc. 	Residential Promotion and Education <ul style="list-style-type: none"> ● Extensive promotion and education campaign on composting by the residential sector, which includes the Master Composter program operated for Metro by RCO, a compost information hotline, radio and newspaper advertisements, and backyard composting manuals in many languages ● Extensive 3Rs promotion and education program, focused on the residential sector, which includes publishing "Your Guide to Reduction and Recycling in Metropolitan Toronto" ● Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements etc. 	Residential Promotion and Education <ul style="list-style-type: none"> ● Extensive promotion and education campaign on composting by the residential sector, which includes the Master Composter program operated for Metro by RCO, a compost information hotline, radio and newspaper advertisements, and backyard composting manuals in many languages ● Extensive 3Rs promotion and education program, focused on the residential sector, which includes publishing "Your Guide to Reduction and Recycling in Metropolitan Toronto" ● Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements etc. ● <i>Promotion/education on Direct Cost program</i> ● <i>Promotion/education program on source reduction, pre-cycling, composting, reuse and recycling</i> 	Residential Promotion and Education <ul style="list-style-type: none"> ● Extensive promotion and education campaign on composting by the residential sector, which includes the Master Composter program operated for Metro by RCO, a compost information hotline, radio and newspaper advertisements, and backyard composting manuals in many languages ● Extensive 3Rs promotion and education program, focused on the residential sector, which includes publishing "Your Guide to Reduction and Recycling in Metropolitan Toronto" ● Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements etc. ● <i>Promotion/education on Expanded Blue Box program</i> ● <i>Promotion/education program on source reduction, pre-cycling, composting, reuse and recycling</i> 	Residential Promotion and Education <ul style="list-style-type: none"> ● Extensive promotion and education campaign on composting by the residential sector, which includes the Master Composter program operated for Metro by RCO, a compost information hotline, radio and newspaper advertisements, and backyard composting manuals in many languages ● Extensive 3Rs promotion and education program, focused on the residential sector, which includes publishing "Your Guide to Reduction and Recycling in Metropolitan Toronto" ● Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements etc. ● <i>Promotion/education for Wet/Dry system</i> ● <i>Promotion/education for source reduction, pre-cycling, composting, reuse, and recycling</i> 	Residential Promotion and Education <ul style="list-style-type: none"> ● Extensive promotion and education campaign on composting by the residential sector, which includes the Master Composter program operated for Metro by RCO, a compost information hotline, radio and newspaper advertisements, and backyard composting manuals in many languages ● Extensive 3Rs promotion and education program, focused on the residential sector, which includes publishing "Your Guide to Reduction and Recycling in Metropolitan Toronto" ● Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements etc. ● <i>Promotion/education for source reduction, pre-cycling, composting, reuse and recycling</i>

**TABLE 3
YORK REGION
RESIDENTIAL SYSTEM COMPONENTS**

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
Garbage Collection and Disposal <ul style="list-style-type: none"> ● Curbside collection of residential garbage from single family dwellings ● Collection of residential garbage from multi-family units by private contractors ● Self haul of waste to landfills and transfer stations by residents ● Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads ● Limit on number of bags/containers set-out for garbage collection (King City) 	Garbage Collection and Disposal <ul style="list-style-type: none"> ● Curbside collection of residential garbage from single family dwellings ● Collection of residential garbage from multi-family units by private contractors ● Self haul of waste to landfills and transfer stations by residents ● Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads ● Limit on number of bags/containers set-out for garbage collection 	Garbage Collection and Disposal <ul style="list-style-type: none"> ● Curbside collection of residential garbage from single family dwellings ● <i>Direct cost system for garbage collection</i> ● Collection of residential garbage from multi-family units by private contractors ● Self haul of waste to landfills and transfer stations by residents ● Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads ● Limit on number of bags/containers set-out for garbage collection 	Garbage Collection and Disposal <ul style="list-style-type: none"> ● Curbside collection of residential garbage from single family dwellings ● Collection of residential garbage from multi-family units by private contractors ● Self haul of waste to landfills and transfer stations by residents ● Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads ● Limit on number of bags/containers set-out for garbage collection 	Garbage Collection <ul style="list-style-type: none"> ● <i>Curbside collection of residential waste from single family dwellings in three streams by specially designed trucks by municipal forces or contractors to municipalities</i> ● <i>Collection of residential garbage from multi-family units in three streams by municipal forces or private contractors, where feasible</i> ● Self haul of waste to landfills and transfer stations by residents ● Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads ● Limit on number of bags/containers set-out for garbage collection 	Garbage Collection and Disposal <ul style="list-style-type: none"> ● Curbside collection of residential garbage from single family dwellings ● Collection of residential garbage from multi-family units by private contractors ● Self haul of waste to landfills and transfer stations by residents ● Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads ● Limit on number of bags/containers set-out for garbage collection

TABLE 3
YORK REGION
RESIDENTIAL SYSTEM COMPONENTS
(continued)

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
Residential Recycling and Collection <ul style="list-style-type: none"> ● Curbside collection of dry recyclables by municipal forces or private contractors ● Materials collected by different municipalities include: ONP, glass, steel, aluminum, PET, OCC, telephone directories, HDPE, rigid and other plastics ● Assume collection of bins of recyclables from multi-family units 	Residential Recycling and Collection <ul style="list-style-type: none"> ● <i>Curbside collection of dry recyclables by municipal forces or private contractors</i> ● <i>Expansion of curbside collection of Blue Box materials from single family dwellings in some municipalities to include all materials designated basic Blue Box waste and at least two materials designated as supplementary Blue Box waste in the 3Rs Regulations</i> ● <i>Curbside collection of additional dry materials</i> ● <i>Recycling services at all multi-family buildings with 6 or more units (3Rs Regulations)</i> ● <i>Collection of bins of recyclables from multi-family units</i> 	Residential Recycling and Collection <ul style="list-style-type: none"> ● Curbside collection of dry recyclables by municipal forces or private contractors ● Expansion of curbside collection of Blue Box materials from single family dwellings in some municipalities to include all materials designated basic Blue Box waste and at least two materials designated as supplementary Blue Box waste in the 3Rs Regulations ● Curbside collection of additional dry materials ● Recycling services at all multi-family buildings with 6 or more units (3Rs Regulations) ● Collection of bins of recyclables from multi-family units 	Residential Recycling and Collection <ul style="list-style-type: none"> ● <i>Curbside collection of Expanded Blue Box materials including plastics, (PET, rigid plastic, bottles & tubes, film plastic, foam plastic and rigid trays); paper fibre (ONP, OCC, boxboard, polycoat, phone books, magazines and catalogues and mixed household paper); metal (steel and aluminum cans, aluminum trays and foil), clear and coloured glass and textiles</i> ● <i>Recycling services for full range of Expanded Blue Box materials at all multi-family buildings with 6 or more units</i> ● <i>Collection of bins of recyclables (collecting all Expanded Blue Box materials) from multi-family units</i> 	Residential Recycling and Collection <ul style="list-style-type: none"> ● <i>Provide carts to all single family households and some "other" households</i> ● <i>Separation of waste into three streams (wet, dry, and garbage) by the householder</i> ● <i>Expanded set of dry materials to be collected, including plastics, (PET, rigid plastic, bottles & tubes, film plastic, foam plastic and rigid trays); paper fibre (ONP, OCC, boxboard, polycoat, phone books, magazines and catalogues and mixed household paper); metal (steel and aluminum cans, aluminum trays and foil), clear and coloured glass and textiles</i> ● <i>Recycling services at all multi-family buildings with 6 or more units (3Rs Regulations)</i> ● <i>Large bins provided in the garbage management area of multi-family buildings if space permits. Residents will be encouraged to separate their waste into three separate bags</i> 	Residential Recycling and Collection <ul style="list-style-type: none"> ● Expansion of curbside collection of Blue Box materials from single family dwellings in some municipalities to include all materials designated basic Blue Box waste and at least two materials designated as supplementary Blue Box waste in the 3Rs Regulations ● Curbside collection of additional dry materials ● Recycling services at all multi-family buildings with 6 or more units (3Rs Regulations) ● Collection of bins of recyclables from multi-family units

TABLE 3
YORK REGION
RESIDENTIAL SYSTEM COMPONENTS
(continued)

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> ● Assume drop-off depots for multi-family residents not serviced by recycling ● Assume drop-off depot for rural households ● Depot at Markham for boxboard, mixed paper, scrap metal and tires, in addition to Blue Box materials 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> ● <i>Drop-off depots for multi-family residents not serviced by recycling</i> ● <i>Some additional recycling service to multi-family units</i> ● <i>Some additional recycling at new depots</i> ● Depot at Markham for boxboard, mixed paper, scrap metal and tires, in addition to Blue Box materials 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> ● Drop-off depots for multi-family residents not serviced by recycling ● Some additional recycling service to multi-family units ● Some additional recycling at new depots ● Depot at Markham for boxboard, mixed paper, scrap metal and tires, in addition to Blue Box materials 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> ● <i>Drop-off depots for multi-family residents not serviced by recycling (collecting all Expanded Blue Box materials)</i> ● <i>Drop-off depot for rural households (collecting all Expanded Blue Box materials)</i> ● Depot at Markham for boxboard, mixed paper, scrap metal and tires, in addition to Blue Box materials 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> ● Drop-off depots for multi-family residents not serviced by recycling ● Drop-off depot for rural households ● Depot at Markham for boxboard, mixed paper, scrap metal and tires, in addition to Blue Box materials 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> ● Drop-off depots for multi-family residents not serviced by recycling ● Some additional recycling service to multi-family units ● Some additional recycling at new depots ● Depot at Markham for boxboard, mixed paper, scrap metal and tires, in addition to Blue Box materials
Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> ● Seasonal curbside collection of leaf and yard waste ● Drop-off depot for leaf and yard waste at regions composting site - no charge to residents 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> ● Seasonal curbside collection of leaf and yard waste ● Drop-off depot for leaf and yard waste at regions composting site - no charge to residents 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> ● Seasonal curbside collection of leaf and yard waste ● Drop-off depot for leaf and yard waste at regions composting site - no charge to residents 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> ● Seasonal curbside collection of leaf and yard waste ● Drop-off depot for leaf and yard waste at regions composting site - no charge to residents 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> ● <i>Collection of leaf and yard waste as part of three stream pick-up</i> ● <i>Separate brush collection</i> 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> ● Seasonal curbside collection of leaf and yard waste ● Drop-off depot for leaf and yard waste at regions composting site - no charge to residents
Residential Household Composting <ul style="list-style-type: none"> ● Backyard composter distribution programs (29,050 composters by end of 1992) ● Limited community composting ● Limited vermicomposting 	Residential Household Composting <ul style="list-style-type: none"> ● Backyard composter distribution programs (29,050 composters by end of 1992) ● Distribution of additional backyard composters by individual municipalities ● Additional community composting ● Additional vermicomposting 	Residential Household Composting <ul style="list-style-type: none"> ● <i>Door to door distribution of backyard composters to 80% of single family households</i> ● <i>Large 3-bin composting units distributed to apartment and co-operative housing complexes</i> ● <i>Promotion of vermicomposting to multi-family units</i> ● <i>Promotion of community composting</i> 	Residential Household Composting <ul style="list-style-type: none"> ● <i>Door to door distribution of backyard composters to 80% of single family households</i> ● <i>Promotion of large 3-bin composting units distributed to apartment and co-operative housing complexes</i> ● <i>Promotion of vermicomposting to multi-family units</i> ● <i>Promotion of community composting</i> 	Residential Household Composting <ul style="list-style-type: none"> ● <i>Door to door distribution of backyard composters to 80% of single family households</i> ● <i>Promotion of large 3-bin composting units distributed to apartment and co-operative housing complexes</i> ● <i>Promotion of vermicomposting to multi-family units</i> ● <i>Promotion of community composting</i> 	Residential Household Composting <ul style="list-style-type: none"> ● <i>Door to door distribution of backyard composters to 80% of single family households</i> ● <i>Promotion of large 3-bin composting units distributed to apartment and co-operative housing complexes</i> ● <i>Promotion of vermicomposting to multi-family units</i> ● <i>Promotion of community composting</i>

TABLE 3
YORK REGION
RESIDENTIAL SYSTEM COMPONENTS
(continued)

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Curbside collection of white goods in all municipalities - frequency varies • Drop-off depots for white goods (King Township) • Mobile HHW depots • HHW collection days (some municipalities) 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Curbside collection of white goods in all municipalities - frequency varies • Drop-off depots for white goods (King Township) • Mobile HHW depots • HHW collection days (some municipalities) 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Curbside collection of white goods in all municipalities - frequency varies • Drop-off depots for white goods (King Township) • Mobile HHW depots • HHW collection days (some municipalities) 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Curbside collection of white goods in all municipalities - frequency varies • Drop-off depots for white goods (King Township) • Mobile HHW depots • HHW collection days (some municipalities) 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Curbside collection of white goods in all municipalities - frequency varies • Drop-off depots for white goods (King Township) • Mobile HHW depots • HHW collection days (some municipalities) 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Curbside collection of white goods in all municipalities - frequency varies • Drop-off depots for white goods (King Township) • Mobile HHW depots • HHW collection days (some municipalities)
Composting Facilities <ul style="list-style-type: none"> • Centralized windrow composting of leaf and yard waste (operated by Miller Waste Systems) 	Composting Facilities <ul style="list-style-type: none"> • Centralized windrow composting of leaf and yard waste 	Composting Facilities <ul style="list-style-type: none"> • Centralized windrow composting of leaf and yard waste 	Composting Facilities <ul style="list-style-type: none"> • Centralized windrow composting of leaf and yard waste 	Composting Facilities <ul style="list-style-type: none"> • Existing centralized windrow leaf and yard waste composting facilities may be closed • <i>New central composting facility (in vessel) for composting of source separated household organics (wet stream) and leaf and yard waste</i> 	Composting Facilities <ul style="list-style-type: none"> • Centralized windrow composting of leaf and yard waste • <i>New mixed waste processing and composting facility</i>
Reuse Centres and Activities <ul style="list-style-type: none"> • Goods exchange days in Richmond Hill 	Reuse Centres and Activities <ul style="list-style-type: none"> • Goods exchange days in Richmond Hill 	Reuse Centres and Activities <ul style="list-style-type: none"> • Goods exchange days in Richmond Hill 	Reuse Centres and Activities <ul style="list-style-type: none"> • Goods exchange days in Richmond Hill 	Reuse Centres and Activities <ul style="list-style-type: none"> • Goods exchange days in Richmond Hill 	Reuse Centres and Activities <ul style="list-style-type: none"> • Goods exchange days in Richmond Hill

TABLE 3
YORK REGION
RESIDENTIAL SYSTEM COMPONENTS
(continued)

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
MRFs <ul style="list-style-type: none"> ● Markham MRF owned by Markham but operated by Miller Waste Systems. Currently operating on a temporary basis (will be replaced by new regional facility that is being built). Processes ONP, container materials and other recyclables - 15,300 tonnes in 1992 ● Richmond Hill MRF operated by Miller - 8,400 tonnes processed in 1992. It too will be replaced by planned regional facility ● New MRF will be required to meet 20 year needs ● Existing MRFs will close when new MRF constructed 	MRFs <ul style="list-style-type: none"> ● New MRF will be required to meet 20 year needs ● Existing/committed MRF in capital budget (\$2.2 million) in operation in 1993 ● Other MRFs will close when new MRF constructed 	MRFs <ul style="list-style-type: none"> ● <i>One new Regional MRF for processing of dry recyclables</i> ● MRF in existing/committed system would close when new MRF operational 	MRFs <ul style="list-style-type: none"> ● <i>One new Regional MRF for processing of dry recyclables</i> ● MRF in existing/committed system would close when new MRF operational 	MRFs <ul style="list-style-type: none"> ● <i>One new Regional MRF for processing of dry recyclables</i> ● MRF in existing/committed system would close when new MRF operational 	MRFs <ul style="list-style-type: none"> ● <i>One new Regional MRF for processing of dry recyclables</i> ● MRF in existing/committed system would close when new MRF operational

TABLE 3
YORK REGION
RESIDENTIAL SYSTEM COMPONENTS
(continued)

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
Residential Promotion and Education <ul style="list-style-type: none"> • Region only advertises HHW and leaf and yard waste programs. Other programs are left to the municipalities • Municipalities conduct extensive promotion through advertising, brochures, hotline phone service and information flyers • Richmond Hill and Markham conducted extensive door to door sales campaigns for composters with assistance from students. Markham also conducted a number of seminars for the general public and schools 	Residential Promotion and Education <ul style="list-style-type: none"> • Region only advertises HHW and leaf and yard waste programs. Other programs are left to the municipalities • Municipalities conduct extensive promotion through advertising, brochures, hotline phone service and information flyers • Richmond Hill and Markham conducted extensive door to door sales campaigns for composters with assistance from students. Markham also conducted a number of seminars for the general public and schools 	Residential Promotion and Education <ul style="list-style-type: none"> • Region only advertises HHW and leaf and yard waste programs. Other programs are left to the municipalities • Municipalities conduct extensive promotion through advertising, brochures, hotline phone service and information flyers • Richmond Hill and Markham conducted extensive door to door sales campaigns for composters with assistance from students. Markham also conducted a number of seminars for the general public and schools • <i>Promotion/education program on direct cost system</i> • <i>Promotion/education program on source reduction, pre-cycling, reuse and recycling</i> 	Residential Promotion and Education <ul style="list-style-type: none"> • Region only advertises HHW and leaf and yard waste programs. Other programs are left to the municipalities • Municipalities conduct extensive promotion through advertising, brochures, hotline phone service and information flyers • Richmond Hill and Markham conducted extensive door to door sales campaigns for composters with assistance from students. Markham also conducted a number of seminars for the general public and schools • <i>Promotion/education program on Expanded Blue Box program</i> • <i>Promotion/education program on source reduction, pre-cycling, reuse and recycling</i> 	Residential Promotion and Education <ul style="list-style-type: none"> • Region only advertises HHW and leaf and yard waste programs. Other programs are left to the municipalities • Municipalities conduct extensive promotion through advertising, brochures, hotline phone service and information flyers • Richmond Hill and Markham conducted extensive door to door sales campaigns for composters with assistance from students. Markham also conducted a number of seminars for the general public and schools • <i>Promotion/education program for wet/dry system</i> • <i>Promotion/education program for source reduction, pre-cycling, reuse, recycling</i> 	Residential Promotion and Education <ul style="list-style-type: none"> • Region only advertises HHW and leaf and yard waste programs. Other programs are left to the municipalities • Municipalities conduct extensive promotion through advertising, brochures, hotline phone service and information flyers • Richmond Hill and Markham conducted extensive door to door sales campaigns for composters with assistance from students. Markham also conducted a number of seminars for the general public and schools • <i>Promotion/education program on source reduction, pre-cycling, reuse and recycling</i>

**TABLE 4
PEEL REGION
RESIDENTIAL SYSTEM COMPONENTS**

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings by municipal forces or contractors to municipalities • Collection of residential garbage from multi-family units by municipal forces or private contractors • Self haul of garbage to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings by municipal forces or contractors to municipalities • Collection of residential garbage from multi-family units by municipal forces or private contractors • Self haul of garbage to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings by municipal forces or contractors to municipalities • Collection of residential garbage from multi-family units by municipal forces or private contractors • Self haul of garbage to landfills and transfer stations by residents • <i>Direct cost system for garbage collection</i> • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings by municipal forces or contractors to municipalities • Collection of residential garbage from multi-family units by municipal forces or private contractors • Self haul of garbage to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection <ul style="list-style-type: none"> • <i>Curbside collection of residential waste from single family dwellings in three streams by specially designed trucks by municipal forces or contractors to municipalities</i> • <i>Collection of residential garbage from multi-family units in three streams, where feasible by municipal forces or private contractors</i> • Self haul of garbage to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings by municipal forces or contractors to municipalities • Collection of residential garbage from multi-family units by municipal forces or private contractors • Self haul of garbage to landfills and transfer stations by rural residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads

TABLE 4
PEEL REGION
RESIDENTIAL SYSTEM COMPONENTS
(continued)

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
Residential Recycling and Collection <ul style="list-style-type: none"> ● Curbside collection of Blue Box materials from single family dwellings and some apartment buildings. Typical materials include at least ONP, PET, glass, ferrous, aluminum (Caledon), these and telephone directories in Brampton ● Expanded curbside collection (Mississauga) to collect additional materials (HDPE, mixed plastic, textiles, OMG, OCC) ● Collection of bins of recyclables from multi-family units 	Residential Recycling and Collection <ul style="list-style-type: none"> ● <i>Curbside collection of Blue Box materials from single family dwellings and some apartment buildings includes all materials designated basic Blue Box waste and at least two materials designated as supplementary Blue Box waste in the 3Rs Regulations</i> ● Expanded curbside collection (Mississauga) to collect additional materials (HDPE, mixed plastic, textiles, OMG, OCC) ● <i>Recycling services at all multi-family buildings with 6 or more units (3Rs Regulations)</i> ● Collection of bins of recyclables from multi-family units 	Residential Recycling and Collection <ul style="list-style-type: none"> ● Curbside collection of Blue Box materials from single family dwellings and some apartment buildings includes all materials designated basic Blue Box waste and at least two materials designated as supplementary Blue Box waste in the 3Rs Regulations ● Expanded curbside collection (Mississauga) to collect additional materials (HDPE, mixed plastic, textiles, OMG, OCC) ● Recycling services at all multi-family buildings with 6 or more units (3Rs Regulations) ● Collection of bins of recyclables from multi-family units 	Residential Recycling and Collection <ul style="list-style-type: none"> ● <i>Curbside collection of Expanded Blue Box materials including plastics (PET, rigid plastic, bottles & tubes, film plastic, foam plastic and rigid trays); paper fibre (ONP, OCC, boxboard, polycoat, phone books, magazines and catalogues and mixed household paper); metal (steel and aluminum cans, aluminum trays and foil), clear and coloured glass and textiles</i> ● <i>Recycling services for full range of Expanded Blue Box materials at all multi-family buildings with 6 or more units</i> ● <i>Collection of bins of recyclables (collecting all Expanded Blue Box materials) from multi-family units</i> 	Residential Recycling and Collection <ul style="list-style-type: none"> ● <i>Provide carts to all single family and some "other" households</i> ● <i>Separation of waste into three streams (wet, dry and garbage) by the householder</i> ● <i>Expanded set of dry materials to be collected, including plastics (PET, rigid plastic, bottles & tubes, film plastic, foam plastic and rigid trays); paper fibre (ONP, OCC, boxboard, polycoat, phone books, magazines and catalogues and mixed household paper); metal (steel and aluminum cans, aluminum trays and foil), clear and coloured glass and textiles</i> ● Recycling services at all multi-family buildings with 6 or more units (3Rs Regulations) ● <i>Large bins provided in the garbage management area of multi-family buildings, where space available. Residents will be encouraged to separate their waste into three separate bags</i> 	Residential Recycling and Collection <ul style="list-style-type: none"> ● Curbside collection of Blue Box materials from single family dwellings and some apartment buildings includes all materials designated basic Blue Box waste and at least two materials designated as supplementary Blue Box waste in the 3Rs Regulations ● Expanded curbside collection (Mississauga) to collect additional materials (HDPE, mixed plastic, textiles, OMG, OCC) ● Recycling services at all multi-family buildings with 6 or more units (3Rs Regulations) ● Collection of bins of recyclables from multi-family units

TABLE 4
PEEL REGION
RESIDENTIAL SYSTEM COMPONENTS
(continued)

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> Drop-off depot for dry recyclables (including all banned materials) at Britannia landfill Depots located at transfer stations to provide recycling opportunities to self-haul generators Drop-off depots for multi-family residents not serviced by recycling Drop-off depots for rural households 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> Drop-off depot for dry recyclables (including all banned materials) at Britannia landfill Depots located at transfer stations to provide recycling opportunities to self-haul generators Drop-off depots for multi-family residents not serviced by recycling Drop-off depots for rural households 7 community recycling centres: 3 in Mississauga, 2 in Brampton, and 2 in Caledon, to accept recyclables, household hazardous waste, reusable items and residential waste Construction of satellite drop-off facilities for recycling (Neighbourhood Recycling Depots and Mini Recycling Depots) 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> Drop-off depot for dry recyclables (including all banned materials) at Britannia landfill Depots located at transfer stations to provide recycling opportunities to self-haul generators Drop-off depots for multi-family residents not serviced by recycling Drop-off depots for rural households 7 community recycling centres: 3 in Mississauga, 2 in Brampton, and 2 in Caledon, to accept recyclables, household hazardous waste, reusable items and residential waste Construction of satellite drop-off facilities for recycling (Neighbourhood Recycling Depots and Mini Recycling Depots) 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> Drop-off depot for dry recyclables (including all banned materials) at Britannia landfill Depots located at transfer stations to provide recycling opportunities to self-haul generators Drop-off depots for multi-family residents not serviced by recycling, for full range of Expanded Blue Box materials Drop-off depots for rural households (collecting all Expanded Blue Box materials) 7 community recycling centres: 3 in Mississauga, 2 in Brampton, and 2 in Caledon, to accept recyclables, household hazardous waste, reusable items and residential waste Construction of satellite drop-off facilities for recycling (Neighbourhood Recycling Depots and Mini Recycling Depots) 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> Drop-off depot for dry recyclables (including all banned materials) at Britannia landfill Depots located at compost facility to provide recycling opportunities to self-haul generators Drop-off depots for multi-family residents not serviced by recycling Drop-off depots for rural households 7 community recycling centres: 3 in Mississauga, 2 in Brampton, and 2 in Caledon, to accept recyclables, household hazardous waste, reusable items and residential waste Construction of satellite drop-off facilities for recycling (Neighbourhood Recycling Depots and Mini Recycling Depots) 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> Drop-off depot for dry recyclables (including all banned materials) at Britannia landfill Depots located at transfer stations to provide recycling opportunities to self-haul generators 7 community recycling centres: 3 in Mississauga, 2 in Brampton, and 2 in Caledon, to accept recyclables, household hazardous waste, reusable items and residential waste Construction of satellite drop-off facilities for recycling (Neighbourhood Recycling Depots and Mini Recycling Depots)
Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> Limited seasonal curbside collection of leaf and yard waste 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> Seasonal curbside collection of leaf and yard waste May be some drop-off depots for leaf and yard waste (3Rs Regulations) 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> Seasonal curbside collection of leaf and yard waste May be some drop-off depots for leaf and yard waste (3Rs Regulations) 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> Seasonal curbside collection of leaf and yard waste May be some drop-off depots for leaf and yard waste (3Rs Regulations) 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> Collection of leaf and yard waste as part of three stream pick-up Separate brush collection May be some drop-off depots for leaf and yard waste (3Rs Regulations) 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> Seasonal curbside collection of leaf and yard waste May be some drop-off depots for leaf and yard waste (3Rs Regulations)

TABLE 4
PEEL REGION
RESIDENTIAL SYSTEM COMPONENTS
(continued)

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
Residential Household Composting <ul style="list-style-type: none"> • Backyard composter distribution programs (56,839 units to end of 1992) • Limited community composting • Limited vermicomposting 	Residential Household Composting <ul style="list-style-type: none"> • Backyard composter distribution programs (56,839 units to end of 1992) • Backyard composters to be used in 68,839 single family households, an addition of 12,000 to existing system • Additional community composting • Additional vermicomposting 	Residential Household Composting <ul style="list-style-type: none"> • Door to door distribution of backyard composters to 80% of single family households • Large 3-bin composting units distributed to apartment and co-operative housing complexes • Promotion of vermicomposting to multi-family units • Promotion of community composting 	Residential Household Composting <ul style="list-style-type: none"> • Door to door distribution of backyard composters to 80% of single family households • Large 3-bin composting units distributed to apartment and co-operative housing complexes • Promotion of vermicomposting to multi-family units • Promotion of community composting 	Residential Household Composting <ul style="list-style-type: none"> • Door to door distribution of backyard composters to 80% of single family households • Large 3-bin composting units distributed to apartment and co-operative housing complexes • Promotion of vermicomposting to multi-family units • Promotion of community composting 	Residential Household Composting <ul style="list-style-type: none"> • Door to door distribution of backyard composters to 80% of single family households • Large 3-bin composting units distributed to apartment and co-operative housing complexes • Promotion of vermicomposting to multi-family units • Promotion of community composting
Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Special curbside collections of white goods • Drop-off depots for white goods • Once a year HHW collection at Bolton Community Centre • Permanent drop-off depot for HHW at the Britannia Road landfill 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Special curbside collections of white goods • Drop-off depots for white goods • Once a year HHW collection at Bolton Community Centre • Permanent drop-off depot for HHW at the Britannia Road landfill 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> • Special curbside collections of Christmas trees following the Christmas season • Special curbside collections of white goods • Drop-off depots for white goods • Once a year HHW collection at Bolton Community Centre • Permanent drop-off depot for HHW at the Britannia Road landfill 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Special curbside collections of white goods • Drop-off depots for white goods • Once a year HHW collection at Bolton Community Centre • Permanent drop-off depot for HHW at the Britannia Road landfill 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> • Special curbside collections of Christmas trees following the Christmas season • Special curbside collections of white goods • Drop-off depots for white goods • Once a year HHW collection at Bolton Community Centre • Permanent drop-off depot for HHW at the Britannia Road landfill 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Special curbside collections of white goods • Drop-off depots for white goods • Once a year HHW collection at Bolton Community Centre • Permanent drop-off depot for HHW at the Britannia Road landfill

TABLE 4
PEEL REGION
RESIDENTIAL SYSTEM COMPONENTS
(continued)

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
Composting Facilities <ul style="list-style-type: none"> Centralized windrow composting of leaf and yard waste (at Brampton site, Britannia Road landfill and Caledon landfill) 	Composting Facilities <ul style="list-style-type: none"> Centralized windrow composting of leaf and yard waste (at Brampton site, Britannia Road landfill and Caledon landfill) 	Composting Facilities <ul style="list-style-type: none"> Centralized windrow composting of leaf and yard waste (at Brampton site, Britannia Road landfill and Caledon landfill) 	Composting Facilities <ul style="list-style-type: none"> Centralized windrow composting of leaf and yard waste (at Brampton site, Britannia Road landfill and Caledon landfill) 	Composting Facilities <ul style="list-style-type: none"> Existing centralized windrow leaf and yard waste composting facilities may be closed Central composting facilities (in vessel) for composting of source separated household organics (wet stream) and leaf and yard waste 	Composting Facilities <ul style="list-style-type: none"> Centralized windrow composting of leaf and yard waste (at Brampton site, Britannia Road landfill and Caledon landfill) New mixed waste processing and composting facility
Reuse Centres and Activities <ul style="list-style-type: none"> Municipal reuse centre (Caledon Landfill scavenging centre, Albion & Brampton goods exchanges) Charitable reuse centres run by social service organizations (Goodwill, Salvation Army, etc.) Food reuse organization (such as Second Harvest) 	Reuse Centres and Activities <ul style="list-style-type: none"> Municipal reuse centre (Caledon Landfill scavenging centre, Albion & Brampton goods exchanges) Charitable reuse centres run by social service organizations (Goodwill, Salvation Army, etc.) Food reuse organization (such as Second Harvest) 	Reuse Centres and Activities <ul style="list-style-type: none"> Municipal reuse centre (Caledon Landfill scavenging centre, Albion & Brampton goods exchanges) Charitable reuse centres run by social service organizations (Goodwill, Salvation Army, etc.) Food reuse organization (such as Second Harvest) 	Reuse Centres and Activities <ul style="list-style-type: none"> Municipal reuse centre (Caledon Landfill scavenging centre, Albion & Brampton goods exchanges) Charitable reuse centres run by social service organizations (Goodwill, Salvation Army, etc.) Food reuse organization (such as Second Harvest) 	Reuse Centres and Activities <ul style="list-style-type: none"> Municipal reuse centre (Caledon Landfill scavenging centre, Albion & Brampton goods exchanges) Charitable reuse centres run by social service organizations (Goodwill, Salvation Army, etc.) Food reuse organization (such as Second Harvest) 	Reuse Centres and Activities <ul style="list-style-type: none"> Municipal reuse centre (Caledon Landfill scavenging centre, Albion & Brampton goods exchanges) Charitable reuse centres run by social service organizations (Goodwill, Salvation Army, etc.) Food reuse organization (such as Second Harvest)
MRFs <ul style="list-style-type: none"> Mississauga processing centre (MRF) for dry recyclables collected from the residential (and minor amounts from the commercial/institutional) sector in Mississauga and Brampton. Owned and operated by Laidlaw under contract to the Region MRF/Transfer Station in Bolton for Caledon material One new Regional MRF for processing of dry recyclables (to meet 20 year requirement) 	MRFs <ul style="list-style-type: none"> Laidlaw MRF will remain open but will not be part of the residential system MRF/Transfer Station in Bolton for Caledon material One new Regional MRF for processing of dry recyclables (to meet 20 year requirement) 	MRFs <ul style="list-style-type: none"> Laidlaw MRF will remain open but will not be part of the residential system MRF/Transfer Station in Bolton for Caledon material One new Regional MRF for processing of dry recyclables (to meet 20 year requirement) 	MRFs <ul style="list-style-type: none"> Laidlaw MRF will remain open but will not be part of the residential system MRF/Transfer Station in Bolton for Caledon material One new Regional MRF for processing of dry recyclables (to meet 20 year requirement) 	MRFs <ul style="list-style-type: none"> Laidlaw MRF will remain open but will not be part of the residential system MRF/Transfer Station in Bolton for Caledon material One new Regional MRF for processing of dry recyclables (to meet 20 year requirement) 	MRFs <ul style="list-style-type: none"> Laidlaw MRF will remain open but will not be part of the residential system MRF/Transfer Station in Bolton for Caledon material One new Regional MRF for processing of dry recyclables (to meet 20 year requirement)

TABLE 4
PEEL REGION
RESIDENTIAL SYSTEM COMPONENTS
(continued)

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
Residential Promotion and Education <ul style="list-style-type: none"> ● 3Rs promotion and education program, focused on the residential sector ● Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements, etc. 	Residential Promotion and Education <ul style="list-style-type: none"> ● 3Rs promotion and education program, focused on the residential sector ● Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements, etc. 	Residential Promotion and Education <ul style="list-style-type: none"> ● 3Rs promotion and education program, focused on the residential sector ● Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements, etc. ● <i>Promotion/education on Direct Cost program</i> ● <i>Promotion/education program on source reduction, pre-cycling, composting, reuse and recycling</i> 	Residential Promotion and Education <ul style="list-style-type: none"> ● 3Rs promotion and education program, focused on the residential sector ● Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements, etc. ● <i>Promotion/education on Expanded Blue Box program</i> ● <i>Promotion/education program on source reduction, pre-cycling, composting, reuse and recycling</i> 	Residential Promotion and Education <ul style="list-style-type: none"> ● 3Rs promotion and education program, focused on the residential sector ● Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements, etc. ● <i>Promotion/education for wet/dry system</i> ● <i>Promotion/education for source reduction, pre-cycling, composting, reuse and recycling</i> 	Residential Promotion and Education <ul style="list-style-type: none"> ● 3Rs promotion and education program, focused on the residential sector ● Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements, etc. ● <i>Promotion/education for source reduction, pre-cycling, composting, reuse and recycling</i>



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Ontario Ministry of Enviro
Greater Toronto area
3Rs analysis - asas
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